VOLUME 2
REDACTED VERSION – UNRESTRICTED RELEASE

Study Title

Protocol for Conducting Insect Repellent Field Efficacy Testing on Mosquitoes Including Supporting Materials Satisfying 40 CFR §26.1125 for *Test Materials 1003715-019 & 1003715-020*

Data Requirement

EPA/OPPTS 810.3400 (Draft)

Authors

Niketas C. Spero
ICR Principal Investigator

Materials compiled by:
toXcel, LLC
7140 Heritage Village Plaza
Gainesville, VA 20155

Performing Laboratory

Insect Control & Research, Inc.
1330 Dillon Heights Avenue
Baltimore, MD 21228-1199

Completed On

April 11, 2007

Project ID

Protocol ID: G0590307001A044

Sponsor

[redacted]

CONFIDENTIALITY STATEMENT

No claim of confidentiality is made for any information contained in this study on the basis of its falling within the scope of FIFRA section 10(d)(1)(A), (B), or (C).

Company: [redacted]

Company Agent: J. Michael Kelley

J. Michael Kelley, Ph.D.
Vice President,
toXcel, LLC
Authorized Representative of [redacted]

Date: 4/11/07

Please Note: A supplemental claim of confidentiality is being made for certain information that the registrant wishes to claim as proprietary for its business and marketing integrity. Substantiation of this supplemental claim follows on pages 4-5 of this volume.

GOOD LABORATORY PRACTICE STATEMENT

The proposed research will be conducted according to the requirements of the Good Laboratory Practice regulations (40 CFR part 160); however, this compilation of materials was not conducted according to the requirements of the Good Laboratory Practice regulations.

Sponsor/Submitter: J. Michael Kelley Date: 4/4/07

J. Michael Kelley, Ph.D.
Global Regulatory Affairs,
toXcel, LLC
Authorized Representative [redacted]

Study Director: N. Spero Date: 4-11-07

Nikolas C. Spero
Principal Investigator,
Insect Control and Research, Inc.

STATEMENT OF SUPPLEMENTAL DATA CONFIDENTIALITY CLAIMS

Supplemental data confidentiality claims are being made for portions of the study protocol that are not described by FIFRA section 10(d)(1)(A), (B), or (C) because of the potential public disclosure of sensitive trade information that may result from EPA HSRB review of this study. Consistent with guidance offered by EPA, the registrant is making supplemental Confidential Business Information (CBI) claims for these study protocols in compliance with guidance provided in PR Notice 86-5. Therefore, a parallel redacted version that is suitable for public (HSRB) release has also been provided with the unredacted, clean version.

The registrant claims confidentiality for the following information effective until 30 days after EPA's approval of registration of the product. The basis for these confidentiality claims is that making public the applicant's name may put the registrant at a competitive disadvantage. Temporary confidentiality is necessary to avoid premature release of such sensitive marketing and business development information associated with the development of a new insect repellent product for registration under FIFRA.

Company identity is considered to be sensitive information that could alert the registrant's competitors to its future business strategies in a highly competitive market. Company identity is not necessary for the HSRB to determine the ethical acceptability of the study protocols during the public HSRB review meeting.

Insect repellent products are high consumer value, marginal profit items. Loyalty is obtained and maintained by consistently providing effective and affordable protection against irritating and persistent pests. This registrant faces a market that is occupied by other companies that work to compete with its market share and associated sales.

Therefore, the registrant submits the following justifications for the supplemental confidentiality claim to protect the company identity in the submission of this redacted version for the HSRB:

Firstly, the mere disclosure that this registrant has a study protocol under review provides its competitors with marketing intelligence that it is developing new insect repellent end-use products. Such marketing intelligence could be used to weaken its competitiveness in a crowded market place, resulting in diminished financial gains.

Secondly, by disclosing the registrant's identity, it gives its competitors insight into the types of testing protocols that it routinely conducts on its insect repellent products. The disclosure of the registrant's identity reveals to competitors its testing strategies as to how it conducts such studies. By this means, the registrant's confidential product stewardship and standard operating procedures could be compromised. Testing strategies, designs of studies, and development of protocols were done at considerable costs to the company.

Thirdly, withholding the company name would eliminate any possible HSRB bias – favorable or negative - associated with the company's name or reputation.
Lastly, knowing the identity of a company should not have any bearing on the HSRB's ability to determine the acceptability of the study protocols.

The registrant has strict company controls in force that involve limitation of staff with access to brand strategies, limited access by any party to formulations, and restrictions on sales and marketing associates to keep future marketing plans in secret. The

registrant has non-disclosure agreements with its suppliers and distributors to protect sensitive business information. External independent consultants and contract research organizations are required to sign Confidentiality Disclosure Agreements (CDAs) before such information is shared with them. As a specific example, TOXCEL LLC conducts its business with the registrant under a CDA that requires them to protect the information the registrant considers confidential. The registrant also honors agreements with its ingredient suppliers to protect their proprietary chemicals used in the registrant's products.

Conclusion

For these reasons, it is imperative that the requested CBI contained in the registrant's protocols be fully protected from disclosure. The requested CBI contained in this document is not necessary for the HSRB to determine the ethical acceptability of the study protocols during the public HSRB review meeting.

The unredacted original version provides all the necessary study protocol details to the Agency to conduct its decision-making process to issue an approval. Furthermore, there is no public interest or health issue that would require the Agency to disclose the name of the study sponsor.

The redacted version of this study protocol can be released without restriction, as sensitive information has been selectively redacted by blacking out information covered by this statement of supplemental data confidentiality claims. This document is submitted in addition to the original version (not redacted) of the study protocol, concurrently being submitted.

Company: [redacted]

Company Agent: J. Michael Kelley

J. Michael Kelley, Ph.D.
Global Regulatory Affairs,
toXcel, LLC
Authorized Representative of [redacted]

Date: 4/11/07

*NOTE: Please see subsequent pages for further details and page references.

APPENDIX A

40 CFR 26.1125 Prior submission of proposed human research for EPA review
[Protocol ID: G0590307001A044]: [April 11, 2007]

Any person or institution who intends to conduct or sponsor human research covered by §26.1 1 01 (a) shall, after receiving approval from all appropriate IRBs, submit to EPA prior to initiating such research all information relevant to the proposed research specified by §26.1115(a), and the following additional information, to the extent not already included:

		Requirement	Y/N	Comments/Page Refs
The following Information, to the Extent not already included:	§1 125(a) a discussion of-	(1) The potential risks to human subjects	Y	13-14,23-26,142-3, 151-2, see next page
		(2) The measures proposed to minimize risks to the human subjects;	Y	13-14,23-26,142-3, 151-2, see next page
		(3) The nature and magnitude of all expected benefits of such research, and to whom they would accrue	Y	14,26,56,64,117,125,143,152
		(4) Alternative means of obtaining information comparable to what would be collected through the proposed research; and	Y	13-15,19
		(5) The balance of risks and benefits of the proposed research.	Y	13-14,23-26,142-3, 151-2, see next page
	§1125(b): All information for subjects and written informed consent agreements as originally provided to the IRB, and as approved by the		Y	50-65, 112-127, 138-154
	§1125(c): Information about how subjects will be recruited, including any advertisements proposed to be used.		Y	20-21, 27-29
	§1125(d): A description of the circumstances and methods proposed for presenting information to potential human subjects for the purpose of obtaining their informed consent.		Y	138-139, 147-148, see next page
	§1125(e): All correspondence between the IRB and the investigators or sponsors.		Y	9-161, see next page
	§1125(f): Official notification to the sponsor or investigator. ... that research involving human subjects has been reviewed and approved by an IRB.		Y	136
all information relevant to the proposed research specified by § 26.1115(a)	(1) Copies of • all research proposals reviewed by the I • scientific evaluations, if any, that accompanied the reviewed by the I RB, • approved sample consent documents, • progress reports submitted by investigators, and reports of injuries to subjects.		N	10-41 research proposals, 138-154 approved consent forms
	(2) Minutes of IRB meetings ... in sufficient detail to show • attendance at the meetings; • actions taken by the IRB; • the vote on these actions including the number of • members voting for, against, and abstaining; • the basis for requiring changes in or disapproving research; • a written summary of the discussion of controverted issues and their resolution.		N	100-108, 136
	(3) Records of continuing review activities.		n/a	n/a for protocols
	(4) Copies of all correspondence between the IRB and the investigators.		N	9-161, see next page
	(5) • A list of I RB members identified by name; earned degrees; representative capacity; indications of experience such as board certifications, licenses, etc., sufficient to describe each member's chief anticipated contributions to IRB deliberations; • any employment or other relationship between each member and the institution, for example, full-time employee, a member of governing panel or board, stockholder, paid or unpaid consultant.		N	155-157
	(6) Written procedures for the I RB in the same detail as described in §26.1108(a) and §26.1108(b).		N	160-161, see next page
	(7) Statements of significant new findings provided to subjects, as required by §26.1116(b)(5).		n/a	n/a for protocols

Protocol for Conducting Insect Repellent Field Efficacy Testing on Mosquitoes Including Supporting Materials Satisfying 40 CFR §26.1125 for *Test Materials 1003715-019 & 1003715-020*

Note: This summary follows the 26.1125 checklist (see p. 6)

(a) The following information, to the extent not already included (§26.1125(a)-(f)):

Note: Many of the responses to the requirements listed below refer back to their inclusion either in the study protocol on pages 10-41 or in the approved informed consent documents (ICDs) on pages 138-154 of this volume. Study location-specific ICDs are identical with the exception of site-specific information (GA on pp. 138-145; FL on pp. 147-154). Preliminary ICDs that were reviewed by Essex IRB are contained on pp. 50-65 and pp. 112-127.

(a)(1) – Characterization of potential risks posed to study subjects and measures taken to minimize those risks are described in the study protocol (pp. 13-14,23-26) and the informed consent documents (pp. 54-56,62-64,116-117,124-125,142-143, and 151-152).

(a)(2) – Characterization of potential risks posed to study subjects and measures taken to minimize those risks are described in the study protocol (pp. 23-26) and the informed consent documents (pp. 54-56,62-64,116-117,124-125,142-143, and 151-152).

(a)(3) – Details regarding expected benefits are described in the study protocol (pp. 14,26) and in each informed consent document (pp. 56,64,117,125,143,152).

(a)(4) – The most reliable data for insect repellent efficacy testing is derived from studies conducted in a field setting on human subjects. This rationale is justified in the study protocol (pp. 13-15,19).

(a)(5) – The risks and benefits of this study are addressed within the study protocol (pp. 23-26) and within the informed consent documents (pp. 54-56,62-64,116-117,124-125,142-143, and 151-152).

(b) – The informed consent documents (ICDs) for study subjects (Georgia and Florida) as originally provided to the IRB are located on pp. 50-65. Updated ICDs (April 5, 2007) are located on pp. 112-127. Approved ICDs are located on pp. 138-154.

(c) – Details regarding test subject recruitment are presented in the protocol on pp. 20-21, 27-29.

(d) – A description of presenting information to potential subjects to obtain his or her informed consent is located on pp. 27-29 of the protocol and on pp. 51-52,59-60,112-113,120-121,138-139,147-148 of the ICDs.

(e) – All correspondence between the investigator and IRB is outlined on the Correspondence Chronology page which follows (essentially pp 9-161). All correspondence is included in this volume including submitted documents for IRB review and IRB approval documents.

(f) – Official notification from the IRB to conduct the proposed research is provided on p. 136.

(b) All information relevant to the proposed research specified by §26.1115(a):

(1) – The study protocol (research proposal) is included on pp. 10-41. Approved sample consent documents are provided on pp. 138-154.

(2) – Information fulfilling this requirement is provided on pages 100-108 and page 136.

(3) – Not applicable for protocols.

(4) – Please refer to 11.25(e) above.

(5) – Information fulfilling this requirement is provided on pages 155-157.

(6) – A copy of a brochure is attached (pp. 160-161) describing some duties of the IRB. Essex IRB asserts its position that copies of its written procedures and standard operating procedures are available to USEPA for review only on the premises of Essex IRB.

(7) – Not applicable for protocols.

Correspondence Chronology between the Investigator and the IRB

Date — Page

March 28, 2007

April 3, 2007

April 5, 2007

April 9, 2007

ICR | *Independent Laboratory*
Pesticide Efficacy Testing
Regulatory Services

March 28,2007

Chairman
Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833-2162

Protocol # G0590307001A044; ICR Project # 0307-059-0155

Dear Dr. Lambert:

Please find enclosed our complete document package for your Full Board Review and approval. The proposed date that we will submit this project to the EPA is **April 4, 2007**, so we respectfully request that we receive your approval prior to this date. We would like these documents sent to us by **Federal Express Overnight**, so please charge the delivery to our FedEx account number 1028-0348-5.

We also request a copy of the minutes of the IRB meeting that pertain to this study, so that we submit them to EPA's HSRB as required by the Common Rule.

We enclose the following documents to support our request:

We are enclosing the following documentation to support this request:

- -Protocol (6 copies) (please return **one approved copy** to us)
- -Informed Consent Form (6 copies each see below)
  - Template Informed Consent Document
  - Site specific Informed Consent Document (Georgia)
  - Site specific Informed Consent Document (Florida)
- -Signed Investigator Attestation Form
- -Signed Investigator Conflict of Interest Declaration
- -Signed Site Application Letter (Georgia)
- -Signed Site Application Letter (Florida)
- -MSDSs for each of the 2 test samples
- -**Three** signed copies of the indemnification from [redacted] for Essex IRB (please return **two** signed copies to us)
- -**One** signed copy of the indemnification from [redacted] for ICR, Inc. (please keep for your files)
- -CVs for several ICR personnel participating in this study are on file at Essex IRB. Also find enclosed updated Cvs for Timothy Foard, Christy Johnson, John Sharpe, and Niketas C. Spero.

Thank you for your attention, and please do not hesitate to contact me by telephone at 410-747-4500, by fax at 410-747-4928, or email address Nspero@icrlab.com if you have any questions.

Sincerely,

Niketas C Spero
Principal Investigator

Enclosures

1330 Dillon Heights Avenue, Baltimore, MD 21228-1199 | tel 410.747.4500 | fax 410.747.4928 | web www.icrlab.com

Study Protocol for Insect Repellent Efficacy Testing Against Mosquitoes

PROTOCOL NUMBER: G0590307001A044

PROJECT NUMBER:
0307-059-0155

PROTOCOL TITLE:
EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

PROTOCOL VERSION DATE
March 26, 2007

PROPOSED FIELD INITIATION DATE
TBD

PROPOSED FIELD CONDUCT COMPLETION DATE
TBD

STUDY DIRECTOR
Niketas C. Spero

STUDY ASSOCIATES
Timothy Foard, Donald Hostetter, John Sharpe, and Christy Johnson

SPONSOR
[redacted]

TESTING FACILITY
ICR, Inc.
1330 Dillon Heights Avenue
Baltimore, MD 21228-1199

TABLE OF CONTENTS

Mosquitoes make enjoyment of outdoor activities unpleasant in many parts of the U.S.A. There are few effective, registered active ingredients available as insect repellents. These two factors provide the impetus for the current search for new effective repellents. Because we are using human study subjects, we will attempt to avoid any positive field locations that could lead to any arthropod-borne transmission, thus reducing the risk to study subjects.

OBJECTIVE

The objective is to evaluate the efficacy of two topical picaridin-based repellents against mosquitoes in two field locations. The sponsor believes the two repellent products will produce an effective mosquito repellent for up to 12 hours. Therefore ICR will conduct field studies to assess repellency of these test samples.

STUDY RATIONALE

This study will evaluate the efficacy of two picaridin-based repellents which have not been previously tested in the field for a duration of up to 12 hours. Presently there are 15 picaridin-based insect repellent products registered under FIFRA. The products range from 5% picaridin to 20% picaridin and include pump spray, aerosol, lotion, and towelete applicator products. ICR has previously evaluated Picaridin-based repellents in both the laboratory and in the field for efficacy. We have found these types of repellents to be efficacious in the laboratory as well as in field studies for up to and beyond 8 hours. In previous studies we have seen no indication of any type of reaction from these repellents, or cause for concern regarding safety issues.

Field studies, such as the one proposed, have been long considered by regulatory authorities and the scientific community to be the most realistic and reliable method for testing the performance of a topically applied insect repellent product. Under FIFRA, EPA requires submission of such human efficacy study data (EPA/OPPTS Guideline 810.3700) in support of insect repellent product registration. Each new insect repellent formulation must have performance studies conducted on human subjects to substantiate the product's label claims.

Each product is unique and will provide different protection times for different pests depending on both its percent active ingredient and formula composition

The prominent risks associated with the proposed field study to assess the performance of these insect repellent formulations are the potential for allergic or irritation responses to the test materials and mosquito bites, and the potential risk of contracting a mosquito or other insect-borne disease. Both of these risks, skin reactions and the disease threat, were significant factors that were considered in detail and addressed in the development of the proposed study design.

With regard to the potential for irritation or allergic reactions to the test material, this risk has been greatly reduced by careful consideration of the components of the test material and avoidance of the use of known sensitizers and irritants. As an added precaution, subjects with a history of reaction to insect bites, insect repellents, and skin care products will be excluded from the study. Further, the subjects will be closely monitored during the study for signs of significant skin reactions and prompt medical attention will be obtained should an adverse reaction be experienced.

While the above risks are a concern to the study sponsor and the conducting laboratory, there are currently no viable alternatives to such human studies for determination of the performance characteristics of insect repellents. As indicated above, it is unlawful to distribute unregistered pesticide products, which include insect repellents. EPA requires that efficacy data collected from human studies be submitted for EPA review in order to obtain approval for an insect repellent registration. These data must substantiate the public health protection claims made on the product's labeling. Specifically, data are required to both substantiate the repellency of specific insect pests and provide the user realistic expectations of the protection time provided from each of those pests by the product.

While there is obviously an economic incentive to the sponsor of the study to offer a new insect repellent alternative to consumers, such products must offer a recognized benefit to consumers or they will simply not be purchased or used. It is important to bring new insect repellent products to market so that consumers have alternatives that they find personally acceptable and convenient to use to protect themselves and family members from irritating and potential disease-carrying insect bites. New products, such as the proposed test samples, have been formulated to provide protection from insect bites in combination with other benefits that promote consumer acceptance and use of the product (i.e., convenience of product form or method of application, fragrance preferences, preference for, or avoidance of, a specific active ingredient, etc.).

ICR plans to evaluate repellency based on protection from bites rather than landings. Disease can only be transmitted by probes and bites, not by landings, so measuring repellency by bites is more realistic from a public health perspective than landings.

In this study efficacy is defined as the Protection Time (PT). The PT is the time interval between the application of the repellent and the First Confirmed Bite (FCB). A bite is defined as the ingestion of blood by a mosquito while it is on a repellent-treated area of skin, as evidenced by an enlarged, blood filled abdomen of the mosquito. The FCB is a bite which is followed by another bite in either the same 5 minute exposure period or the next consecutive 5 minute exposure period.

This study may be submitted to EPA to support an insect repellent registration. The efficacy study will test the repellent formulations at two locations, Georgia or Florida, using12 treated test subjects, and 2 untreated test subjects. The test locations will be based upon the absence of

mosquito-borne disease and adequate mosquito populations. Dosage will be at the EPA recommended rate (OPPTS Guideline No. 810.3700) of 1g/600cm^2 (1.67mg/cm^2). This application rate is one that we have successively used in previous studies. We have found through 20 years of conducting repellent studies that this rate is the minimum amount of product that provides excellent coverage to the designated treated area (250 cm^2).

According to the draft EPA OPPTS Guideline No. 810.3700 " Product Performance of Skin-Applied Repellents of Insect and Other Arthropods", there exists no alterative to evaluating topical repellents on human subjects in the field; therefore, field testing repellents is necessary.

STUDY OVERVIEW

- ICR will recruit from our database of test subjects.
- During the recruitment process, interested potential test subjects will have an Informed Consent Document (ICD) mailed to them if required. ICR will call to confirm receipt of ICD. They will be instructed to contact the Principle Investigator (P.I.) to verify receipt of the ICD and to ask any ICD or study related questions.
- All interested people will be offered the opportunity to come to ICR to go through the consent process in person.
- The P.I. will contact all interested subjects by phone several days after receipt of the ICD to fully explain the ICD by reading it to them. Sufficient time will be spent with each interested subject to answer any questions they may have. They will then be invited to sign the ICD. Each consenting subject will be asked to sign and date the ICD in the presence of a witness. The witness will then sign and date the ICD. Each consenting test subject will be asked to mail the signed ICD back to ICR.
- A copy of the signed ICD will be provided to each study subject, either by mail or in person depending upon whether consent was in person or by phone.
- Consenting subjects will be notified of travel arrangements in advance of the study date.
- The P.I. and ICR staff meet with test subjects at the airport either in Florida or Georgia, depending on test location. In the event of a delayed flight ICR staff will make arrangements to escort subjects to our hotel. Local test subjects will meet at our place of lodging.
- The night before the test, staff and test subjects will be instructed to meet at a predetermined time and location at the hotel.
    - At this meeting unscented soap will be provided to each test subject.
    - The study parameters will be explained to everyone.
    - Any subjects found to be ineligible for any reason or who decline to

participate will be taken to the airport and rerouted home if possible. If this is not possible they will be provided food and lodging at ICR's expense for the duration of the study.

- All subjects will have their arms measured. If a subject has been previously measured, these existing measurements will be used.
- Subjects will be instructed when and where to meet for transportation to the field site.
- The night before the test ICR staff will spray the outside of everyone's shoes that will be worn during the field study with permethrin to help repel ticks that may be at the test site.

- If time permits on our day of arrival ICR staff will scout for test locations. If the locations and mosquito density are appropriate, we will test the next day, if not we will scout again the next day.
- The following will occur on the study day:
  - All test females will take an OTC pregnancy test.
  - The pregnancy tests will be read by a qualified female ICR staff to verify no positive pregnant test subjects are present.
  - Selection of treated test subjects and control test subjects will be done by lottery.
  - Treated test subjects and controls will be identified.
  - Treated and control subjects will wash their arms.
  - ICR staff will measure, and establish the treatment area and untreated control area on test subjects' arms.
  - Treatment and control areas will be bandaged and taped.
  - ICR staff will transport themselves and the test subjects to the field test location.
  - Subjects are supplied necessary test protective equipment(headnet, gloves).
  - ICR staff verifies adequate mosquito pressure with control subjects.
  - Treatments are applied to the test subjects.
  - Exposure begins for the treated test subjects. Exposure periods will be 5 minutes in duration every 30 minutes.
  - If mosquito density drops below the target goal, the group may travel to the alternate site previously determined by scouting.
  - Treatment exposure ends either through breakdown or end of study duration
  - ICR staff helps subjects remove bandages, clean off repellent and treat bites.
  - ICR staff will inspect the clothing of all test participants for ticks
  - Everyone returns to our place of lodging.

MATERIALS

TEST SAMPLE NOMENCLATURE

	Product Name	Specific Gravity	Application Rate	Application/250cm^2
A.	TA# 1003715-019 (A)	0.96	1.67 mg/cm^2	0 .44 ml.
B.	TA# 1003715-020 (B)	0.96	1.67 mg/cm^2	0 .44 ml.

A Material Safety Data Sheet (MSDS) shall be provided for each test, control, and/or reference sample, which will include any hazardous information of the samples. The percentage of all active ingredients and any hazardous constituents must be included in all MSDSs.

A chain of custody letter must accompany all test, control, and/or reference samples.

NOTICE: Sample characterization is a key GLP (Good Laboratory Practices) requirement detailed in 40 CFR Part 160. The sponsor is solely responsible for conducting the complete test sample, control sample, and any reference sample characterizations according to GLPs, and for providing ICR with this characterization data prior to the experimental start date of this study. This characterization must define the identity, strength, purity, and composition of the batch(es) or lot(s) of test samples If any of the test, control and/or reference samples are currently available for consumer use and/or purchased in the marketplace, ICR will need the same characterization information provided by the sponsor prior to the experimental start date of this study. If documentation of this characterization is not provided prior to the experimental start date, this will be noted as a non-compliance item in the GLP compliance statement. This sample characterization information will be retained in the ICR archives, and a statement identifying this location will be included in the final report.

According to GLP, the study sponsor will provide the ICR Study Director with the confidential disclosure of the entire compositions of the test samples prior to the experimental start date. These proposed insect repellent formulations use the active ingredient, Picaridin®, which was first registered by the US EPA under FIFRA on December 7, 2000. As required under FIFRA, registration of Picaridin® as an active ingredient is supported by an extensive data package that includes toxicity test data that demonstrate low acute and chronic toxicity. This active ingredient has been successfully used without significant incident by the study sponsor and other insect repellent formulators (and millions of consumers).

The inert ingredients in the test samples were selected because they are widely used in cosmetic and personal care formulations, are non-sensitizers, and experience has shown that their combination is both beneficial for skin care and safe for direct human exposure. To expedite product registration under FIFRA, the sponsor has confirmed that the inert ingredients have been previously reviewed and approved by EPA for use in FIFRA registered products.

For currently registered products containing the same concentration of Picaridin® as the active ingredient (a.i.), the US EPA risk assessment assumes that each application of insect repellent products is applied to a skin surface area of 4,538 cm^2 for adults. In the proposed tests for mosquito repellent efficacy, the formulated product is applied once to adults on the test day over a surface area of only 500 cm^2 (*i.e.*, two patch areas of 250 cm^2 each). Consequently, the test subjects in this study will only be exposed over an area of approximately 11 percent of that previously reviewed and approved by EPA for products with the same a.i. concentration. Further, the label directions of these registered products allow for up to two applications per day, while the efficacy study will employ only one. A 100-fold margin of exposure (MOE) is considered to be the target for the determination of acceptable risk from systemic exposure. The MOE is based on the No Observed Adverse Effect Level (NOAEL) for systemic effects, the concentration of active ingredient in the formulation, frequency and rate of application, skin surface area and body weight, and dermal absorption. The MOE for the test subjects in this efficacy study will substantially exceed the minimum 100-fold target and is, therefore, considered acceptable under widely recognized scientific standards.

The stability of the test, control, and/or reference samples shall be determined by the sponsor prior to the experimental start date. When relevant to the conduct of this study, the **solubility** of each test, control, and/or reference sample shall be determined prior to the experimental start date.

Methods of synthesis, fabrication, or derivation of the test, control, and/or reference samples shall be documented by the sponsor, and the location of such documentation shall be specified by the sponsor in a letter to the Study Director.

The stability of test, control, and/or reference samples stored under the test site conditions shall be known for all studies.

All unused test samples will be returned to the sponsor within 30 days after the final report is sent to the sponsor. The sponsor will be responsible for all costs for the return of the samples, including any costs associated with hazardous materials shipping.

TEST SITES

This study will be performed in two different times at two different sites. Two sites will be chosen based upon the absence of mosquito-borne disease and adequate mosquito populations. The first site will be at the following address:

The Savannah-Ogeechee Canal Museum & Nature Center
618 Fort Argyle Rd.
Savannah, Georgia 31419

The second site will be at the following address:

Pine Island, Florida Lee County Mosquito Abatement District

TEST ORGANISM(S)

Natural adult populations of mosquitoes found in the Coastal area of Georgia will be the test organisms. The anticipated species occurring in this test area should be primarily *Aedes vexans, Psorophora ferox* and *Ochlerotatus infirmatus* plus other minor occurrences of native species.

Natural adult populations of mosquitoes found in the Gulf Coast area of Florida will be the test organisms. The predominant species in this test area is anticipated to be *Ochlerotatus taeniorhynchus* plus other minor occurrences of native species.

Specimens will be collected from landings on the ICR staff at both sites and returned to the laboratory for identification by a Board Certified Entomologist.

SUBJECTS

Human subjects are required for this study because they represent the feeding target of the mosquitoes. The purpose of these repellents is to prevent mosquitoes from biting humans. There are no satisfactory substitute models for testing repellency to mosquitoes. While there has been experimental work on product repellency accomplished using mice or guinea pigs, the data did not give reliable results when compared to data gathered from human subjects.[1]

ICR, Inc., (ICR) policy complies with the Department of Health and Human Services Policy at 45 C.F.R. pt. 46 and 45 C.F.R. §§ 46.109, 46.116, and the EPA Part 26 model rule at 40 C.F.R. pt. 26 Subparts K and L, when human volunteers are used. Thus ICR submits a protocol, informed consent

[1] Busvine, James R. 1971, A Critical Review of the Techniques for Techniques for Testing Insecticides, Commonwealth Agricultural Bureaux, England, p 233-245

document, and standard indemnification forms to an independent institutional review board (IRB) set up to ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner.

ICR uses the following IRB for this service:

Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833

This IRB is accredited by PHRP, and is in the process of obtaining accreditation from AAHRPP.

Approval of all documentation for human volunteer testing must be obtained before such testing can occur.

ICR has developed a pool of male and female test subjects. The test subjects we recruit represent a diverse group including professionals such as working teachers, business owners and engineers, as well as students, housewives and others. They are available to travel for field tests. ICR will recruit 14 subjects from this group for each location (a total of 28).

ICR will exclude pregnant and breastfeeding women from this study due to ethical concerns. We will also exclude children under the age of 18 for the same reason. Non-English speaking individuals will be excluded to ensure that comprehension and understanding of the ICD and test parameters is without question. Full time employees of either ICR, Inc. or the sponsor will be excluded to ensure that coercion is not an issue. Individuals sensitive to either mosquito bites, insect repellents, or skin care skin products will be excluded to avoid placing them at risk. Although the groups of people that ICR would exclude from using as test subjects would certainly represent individuals that could use repellents, we feel justified for not including them for the reasons that are mentioned above.

ICR will only include individuals attesting to be healthy in this study who are available to travel to distant field locations. These subjects need to be capable of reading and understanding English.

The database of potential test subjects that we select our subjects from, is as representative of potential repellent users as we are able make it in terms of both practical and ethical considerations. Our test subjects need to be in good health to withstand the rigors of field testing. They must be available to travel to out of state test locations. Test subjects must be able to speak and understand English in order to truly be informed and comprehend the scope of the study as explained to them. We will accept individuals between the ages of 18 to 65. This age group represents a large portion of the population who through their diverse activities would both encounter mosquitoes and could have a need to use insect repellents.

ICR will select individuals from our database of potential test subjects. This will be accomplished by drawing numbers that correspond to a particular test subject. We will attempt to select even numbers of male and female test subject to eliminate any gender bias to attractiveness to mosquitoes.

REMUNERATION

All travel costs, as well as lodging and food expense, for the subjects will be paid by ICR. The subjects will be paid $11/hour for a typical 9-hour travel day, for a total payment of $99 for the day. For working days that go beyond 9 hours, the subjects will be paid at a rate of time and one half ($16.50/hour) for the overtime hours. The payment for a 12 hour test day will be $ 148.50 for 12 hours plus $16.50 for any additional hours beyond 12. Payment will be mailed to the subject at the conclusion of the field portion of the study.

All subjects will have signed "Informed Consent Statements" prior to acceptance as a study participant. The Informed Consent Document will be formally explained to all of the test subjects before the study is scheduled to begin. If any test subject refuses to sign after learning the details of the document, they will not be allowed to participate in the study. To try to avoid this inconvenience, the informed consent will be explained to each test subject, either in person, on the telephone, and by mailing ICDs prior to the study, to try to eliminate any potential test subject not interested in the project. The "Informed Consent Document" will have been approved by an Institutional Review Board before it is presented to the test subjects.

NEGATIVE CONTROL

Sufficient biting pressure (i.e., mosquito landing rates in the range of 1 to 10 per minute in a 250 cm^2 area on each of the exposed untreated control arms for up to a 5 minute period) will be confirmed at the commencement of the study and throughout the study. One untreated arm of each of the two control subjects will serve as negative controls. These controls will be selected at random from the total pool of test subjects by drawing names. Different subjects will be used as controls for each day of the study. This will be accomplished by removing the names of subjects already used as negative controls from the pool when drawing names of subjects to be used for the next day's test.

Negative controls will be used to monitor the level of mosquito activity in the area by baring the 250cm^2 untreated area on their arm for up to five minutes every one-half hour while the study director or an assistant counts the number of mosquitoes which land on the bare skin. If the stated landing rate has been verified prior to the end of the five minute period, the control will stop exposing their bare arm to mosquitoes. To minimize the number of bites, the mosquitoes will be brushed away with the tip of a pencil or pen after being counted. The negative controls are also protected by covering the untreated test area with the shirt sleeve in between the 5-minute test sessions. Like the treated test subjects, the negative controls will be protected with a head net and latex or vinyl gloves.

The negative controls will not be exposed to any repellent related risk.

POSITIVE CONTROLS

A positive control is intentionally excluded from the proposed study protocol for several reasons. The sponsor understands that such practice is generally discouraged in these types of studies by the EPA/OPP and that positive controls in these types of studies are optional. Data on a positive control group serves no purpose in this study to confirm the mosquito repellency of the test product and determine a reliable protection period under real-life field conditions. Putting additional subjects at risk, however minimal, to include a positive control group is not necessary.

SUPPORT STAFF

Additional ICR staff members will support the Study Director and test subjects in their activities. ICR staff members, along with the Study Director, will record all test data. Test subjects will not record any data. The study results would be difficult to defend in an EPA audit or in a court of law if a test subject records data.

ICR staff have been hired on the understanding that field study participation is a condition of employment. All details of field testing are outlined to potential employees prior to their accepting a position at ICR, Inc.

To meet one of the GLP requirements, a QA representative will monitor the study conduct and prepare phase inspection reports.

MISCELLANEOUS

Stools, syringes, latex and vinyl gloves, aspirators and vials, clip boards, head nets, duct tape, data record forms, scissors, elastic bandages, or Velcro® straps, Elastikon® tape, pencils, marking pens (e.g. Sharpie®), sling psychrometer, anemometer, unscented Neutrogena® soap, paper towels, ice chest and ice, camera, mechanical counters.

RECORDS TO BE MAINTAINED

All study notes, data collection sheets (true copies), SOPs (originals), Chain of Custody letters (true copies), Sample Log and Sample Record of Use Forms (true copies), the protocol (true copy) and signed Informed Consent documents will be maintained in the ICR archives. The original documents will be provided to the sponsor for archiving with the exception of SOPs, Master Schedules, signed Informed Consent documents, test sample characterization, and personnel files.

RISK CHARACTERIZATION AND MINIMIZATION

The subjects will be exposed to three types of risk:

1. They will be treated with a test repellent.

The active ingredient, Picaridin® demonstrates a low acute oral, dermal and inhalation toxicity. It is classed as Category IV for acute inhalation toxicity and primary dermal irritation. It is not a dermal sensitizer. The EPA "New Pesticide Fact Sheet" indicates that the toxicology data base for the active ingredient is complete and no additional studies are required.

There is minimal risk for subjects to experience an adverse reaction to the insect repellents being tested. The study sponsor that developed the test repellents has over 120 years of experience formulating and producing a wide variety of cosmetics and personal care products with worldwide sales.

All of the inert ingredients used in the finished insect repellent products have a long history of safe use in various personal care and cosmetics products.

Moreover, the sponsor has confirmed that all of the inert ingredients used in each of the test repellents have been previously reviewed and approved by EPA for use in FIFRA registered insect repellent products.

While there is low concern for the toxicity potential for the test samples to induce an adverse reaction in the test subjects, they will be monitored throughout the study and prompt medical attention will be obtained if any adverse reaction is observed among the subjects on test. Those individuals who are known or claim to have allergies to mosquito bites, insect repellents, or skin care products will be excluded from participation in the study.

2. They will be exposed to bites from mosquitoes.

All subjects known to have severe reactions to mosquito bites will be excluded from this study.

All subjects will be issued head nets and a choice of latex or vinyl gloves. Only a small area (250 cm^2) of skin on each arm will be exposed. All other parts of the body will be covered with the subject's personal clothing. The exposed areas will be covered immediately upon receiving a FCB on that area. Caladryl® or Calamine® lotion and rubbing alcohol will be available at the study site for use to mitigate any reaction to mosquito bites.

3. They may be exposed to vectors of arthropod-borne diseases

It is recognized that mosquitoes are vectors of many diseases and this issue is clearly communicated to potential test subjects. Since the EPA requires demonstration of the repellency of mosquitoes known to carry specific diseases such as the WNV in order to substantiate related product claims, the sponsor is compelled to conduct field testing in areas in which test subjects will attract these potential vector species. While the potential for contracting disease cannot be fully eliminated, that risk is reduced by avoiding conduct of the study in an area known to be associated with current incidents of mosquito and other insect-borne disease. Appropriate mosquito abatement authorities in the region of the proposed test site will be consulted immediately prior to the initiation of the field study to confirm that there has been no recent outbreak of mosquito or other insect-borne disease in that area.

The CDC estimates that only about 1 in 5 people who contract WNV will be affected. About one in 150 people infected with WNV will develop severe illness and about 4 of 5 will show no symptoms. Most people who have developed serious symptoms have been the elderly or those with a compromised immune system. The principal carriers of the WNV belong to the Culex genus (a genus is a group of similar species). This particular genus of mosquitoes is not common in areas where we will be conducting the study. While the risk of contracting WNV is considered to be low, no guarantees can be offered.

Georgia reported 8 cases of West Nile Virus, one case of Eastern Equine Encephalitis, one case of La Crosse Encepahiltis in 2006. The La Crosse Encephalitis affects predominantly children under the age of 16.

Of the 8 cases reported in Georgia, one incidence of the West Nile Virus was reported for Chatham County, the proposed Georgia site of the study.

Florida reported 3 cases of West Nile Virus, one case of Eastern Equine Encephalitis and no other arbovirus type cases in 2006. None of these cases occurred in Lee County, Florida, the proposed study site.

Both the Mosquito Abatement Districts in Chatham County, Georgia, and in Lee County, Florida, monitor for disease bearing mosquitoes on a weekly basis and have agreed to supply ICR with that data for one week before and one week during the test. The study will be conducted only if surveys prior to the test are negative.

To minimize the threat from ticks, on the evening prior to the day of testing, the outside of the shoes to be worn during testing, of each subject and the ICR staff will be treated with a 0.5% permethrin aerosol to stop any ticks in the test areas from crawling onto the test subjects. No one will be wearing the shoes when the shoes are treated so that the spray will not hit any skin that will be treated in the test, or clothing that will be near the treatment area. The spray will be dry before the test begins and it will not be reapplied during the course of the test.

The subjects will only need to receive two mosquito bites in each of the 250 cm^2 treatment areas within 30 minutes to confirm breakdown, after which the exposed area is covered. Additionally, risk is minimized due to limiting study subject exposure to 5 minute intervals every 30 minutes. All of the above factors combined will minimize disease and bite risk. Thus the risk to the test subjects is no more than one which they would experience in normal outdoor activities.

There will be First Aid qualified staff members on site, and First Aid supplies will be available at the test site at all times. A selected local hospital will receive prior notification of this study and on-site staff will have cell phones to make emergency calls if necessary. In the case of medical emergency people will be transported to the selected local hospital by either ICR staff or professional ambulance.

The Savannah-Ogeechee Canal Museum & Nature Center, Savannah, GA study site the following hospital will be available:

Distance from the study site - 10 miles
St. Joseph Candler Health System
5353 Reynolds Street
Savannah, GA. 31405 Telephone 912-692-6000

For the Pine Island, Lee County, Florida study site the following hospital will be available:

Distance from the study site - 25 miles
Cape Coral Hospital
636 Del Pardo Blvd.
Cape Coral, Florida 33904 Telephone 239-574-2323

If any test subjects need medical attention, their medical care will be paid by ICR.

DISCOMFORT AND HAZARD

Mosquitoes are the primary vectors (carriers) of many diseases. Fortunately, most of these diseases do not occur naturally in the United States. Diseases like malaria and dengue are occasionally introduced by travelers, for example, two cases of naturally acquired malaria have been diagnosed in northern Virginia. Mosquitoes are also known to carry various types of encephalitis viruses. Currently the West Nile Virus (WNV) is widespread throughout the U.S. This mosquito-borne virus has caused much concern in some areas. The state of Georgia had 8 reported cases of WNV in humans in 2006, while Florida had 3 cases of WNV in humans in 2006. The principal carriers of the WNV belong to the Culex genus (a genus is a group of similar species). These mosquitoes are not common along the coast of Georgia or Florida in the areas where we will be conducting the study. The percentage of mosquitoes carrying WNV is small. Of those people bitten by an infected mosquito only a small percentage will contract WNV. Only a few of those people developing symptoms of WNV, will

develop serious symptoms. Most people who have developed serious symptoms have been the elderly or those with a compromised immune system. The most common symptoms of WNV are mild illness with fever, headache, and body aches. While the risk of contracting WNV is considered to be low, no guarantees can be offered. After the study completion, any subjects experiencing any of the above symptoms should seek medical attention. In the event that a study related injury or illness should occur, test subjects would be instructed to seek medical attention through a health care provider, at ICR's expense. Test subjects would be instructed to submit study related bills to ICR. ICR will incur the cost of any study related bills.

BENEFITS

The purpose of this proposed insect repellent efficacy field study is to determine the protection time that can be reliably anticipated from use of these products. Field studies, such as the one proposed, have been long considered by the EPA (and the sponsor) to be the most realistic and reliable testing method available to predict protection time of a topically applied insect product. While the sponsor is an obvious beneficiary of the proposed test, the resulting information on the performance of the products will also directly benefit consumers because it will substantiate which insect pests will be repelled and provide realistic expectations for protection time. Clearly, both the study sponsor and consumers benefit from the performance of this study to provide the data required under FIFRA to substantiate this pesticide product's label claims. Specifically, FIFRA guidelines require human efficacy test data on insect repellents intended to be applied directly to the skin claiming to repel insect vectors such as mosquitoes.

Insect repellent products help prevent annoying bites and likely serve to decrease the potential spread of some diseases. It is known that consumers use insect repellents to help reduce the risk of WNV and other vector-borne diseases as stated by the CDC. The proposed study will attempt to substantiate that the test articles repel mosquitoes and will provide the user with a reliable estimate of protection time that can be anticipated under real-life conditions. It is important to bring such new products to market so that consumers can have access to alternative formulations that work best for them. That is, some formulations seem to provide longer protection times to certain individuals or simply be more convenient, pleasurable, or preferable to use (i.e., convenient product form or method of application, fragrance preferences, combination with sunscreen or skin care ingredients, aversion to or a preference for certain active ingredients , etc.).

TEST SUBJECTS

Eligibility requirements:

Sex:	Male/Female
Age:	*18 to 65*
Race:	No exclusions
Literacy:	Test subjects must be able to read, speak, and understand English

Ineligibility reasons:

1. Test subjects can not participate if they are pregnant or breastfeeding.
2. Test subjects can not be a permanent full time employee of ICR Inc.
3. Test subjects must follow the requirements of the study as explained to them.
4. Test subjects must not be sensitive to mosquito bites.
5. Test subjects must have no known sensitivity to insect repellents or skin care products.
6. Test subjects must be attractive to mosquitoes, as evidenced by previous being bitten by mosquitoes.
7. Test subjects must not smoke or drink alcoholic beverages 12 hours prior to the test.
8. Test subjects must not use perfumed cosmetics, skin creams, shaving lotions, etc. after 12 AM before the test, and during the test.
9. Test subjects must wear proper protective clothing during the test, such as their own blue jeans, heavy socks, long sleeve shirts, and a headnet and gloves provided by ICR.

Number of subjects and Rationale for Sample Size

The EPA Guideline (EPA/OPPTS Guideline 810.3700) recommends at least six test subjects be used. Because of the cost of doing field studies, it is prudent to ensure data collected will give a good representation of the repellency of the test formulations. In a published paper[2] the number of subjects required to achieve an estimated among-subjects standard deviation for specific times of 0.5 hours to 2.0 hours was calculated for protection times from 1 hour to 8 hours. The number of subjects required to achieve an estimated among-subjects standard deviation of 2.0 hours at a 95% confidence level for an 8 hour protection time was calculated to be between 10 and 11 subjects. This study, therefore, will use ten treated test subjects. There will be an additional two control subjects, plus two additional treated test subjects to replace anyone that either drops out or is ineligible to participate due to a positive pregnancy test or other unforseen circumstances. These additional two treated test subjects will help to ensure a minimum "n" of ten and will aid in protecting the privacy of any dropouts.

Test Subject Recruitment

ICR has been conducting repellent studies for over twenty years. During this time ICR has amassed a large list of potential study subjects. These subjects also refer friends and colleagues to us. When a repellent study date has been established, ICR will contact potential study subjects by telephone and

[2] L.C. Rutledge and R. K. Gupta, 1999, Variation in The Protection Periods of Repellents on Individual Human Subjects: An Analytical Review, Journal of the American Mosquito Control Association, 15(3):348-355

briefly discuss the study, the date of the study, and location. Any study specific inclusion/exclusion requirements will also be mentioned at this time. When the number of interested subjects required for a particular study has been met, ICR will stop recruitment.

ICR uses the following initial telephone script to recruit test subjects:

"ICR will be conducting a repellent project on these dates, (Month, Day(s), Year), at (exact study site) would you be available to participate in this study?"

If the potential test subject is available, the inclusion/exclusion criteria will be discussed in detail and verified whether the subject qualifies to participate. The ICD will also be discussed with the test subject at this time. In addition, ICR will mail a copy of the ICD to each interested test subject for their review. They will be instructed to contact the P.I. to verify receipt of the ICD and to ask any ICD or study related questions they may have.

The P.I. will contact all interested subjects by phone several days after receipt of the ICD to fully explain the ICD with them. All contacted people that show interest will be offered the opportunity to come to ICR to go through the consent process in person. If interested subjects are unable to travel to ICR, the consent process will be conducted on the phone. Sufficient time will be spent with each interested subject to answer any questions they may have. When both the P.I. and the interested subject are satisfied that they have meet the study qualifications for inclusion into the study, understand and are comfortable with the ICD, they will then be invited to sign the ICD. Each subject will be asked to sign and date the ICD in the presence of a witness. Their signature will acknowledge that they have been informed and freely give their consent to participate in the study. The witness will then sign and date the ICD. Each test subject giving their consent by phone will be asked to mail the signed ICD back to ICR. A copy of the signed ICD will be provided to each study subject, either by mail or in person depending upon whether consent was in person or by phone.

When a subject is available, and qualifies for a particular study, and is willing to participate based on study requirements as explained, and has signed an ICD, they will be notified of study specific travel arrangements in a follow up call closer to the study date.

ICR has been fully compliant with 40 CFR 26.1125 in obtaining written approval for all repellent studies from an independent Institutional Review Board

In the event that an interested subject declines to sign an informed consent document, they will not be permitted to participate in the study.

There is no coercion for any subject to participate. The inclusion/exclusion criteria are clear, the payment is clear, the subjects are informed of the conditions they will likely encounter and what is

expected of them. Each consenting test subject will be informed that they may drop out of the study at any time. Further, they may leave as soon as practical after early withdrawal from the test.

METHODS

Experimental Design

This is a subject-blinded study. The delineated areas on the arms of subjects will be treated and used as test areas. Only arms are being treated in this study, in an attempt to further reduce the areas available for mosquitoes to bite. In addition, arms are quite easy to monitor for mosquito activity. Therefore there will be twelve test arms for each treatment. Each test subject will have one arm treated with one of the two test products and the other arm will be treated with the other test product.

Test site location:

The test locations at each test site will be selected before the study is to start. The principal criterion will be landing rates in the range of 1 to 10 per minute in a 250cm^2 area on an exposed untreated arm over a five minute period. Landing rates will be determined by the support staff, and/or the Study Director, who will expose an untreated arm (one per person) at likely sites throughout the test area.

Test site selection criteria will be based on unobstructed space and acceptable mosquito species composition. The repellents will be evaluated at one or more sites depending on landing rates observed and verified by ICR staff. At least two test sites will be selected for each day's testing. The sites will be rotated if necessary in order to maintain adequate biting pressure.

If previous observation has determined that the length of the mosquito activity period is less than the twelve hours required for the test, the test subjects will be treated early enough before mosquito activity begins to allow the end of their twelve-hour exposure period to correspond to peak, or nearly peak, mosquito activity. If the products successfully repel all mosquitoes at the end of the twelve-hour exposure period, the conclusion will be made that they would have provided complete repellency for the entire exposure period. The control subjects will monitor mosquito activity for the entire twelve hours. Test subjects and controls will be directed to positions along or adjacent to a trail or similar accessible habitat.

Blinding of the Study

The test samples will be coded as "A" and "B". During the test these codes will be the only test sample designation referred to or that the test subjects will see. The Study Director and members of the ICR staff will know the actual test samples, but will refrain from such identifications in the field.

Treatment Groups

There will be two groups for each test location(Georgia and Florida): a treated group of twelve subjects whose arms will be treated, and an untreated (control) group of two test subjects whose arms will be untreated. Subjects will be given a subject number. They will be assigned to the groups by lottery selection of the subject number.

Personnel preparation

All test subjects will complete and will sign an "Informed Consent Document" prior to acceptance as a test participant.

On the evening prior to the first day of testing, the outside of the shoes of each test subject, the controls and the ICR staff will be treated with a 0.5% permethrin aerosol to help prevent ticks from crawling on test participants in the test areas. This treatment will not affect the test but will help protect the people involved from ticks. Permethrin has a low vapor pressure and will not interfere with the repellency of the treated arms.

Females will be required to perform an over the counter pregnancy test that will be supplied by ICR. They will do this the morning of the test. The results will be verified by a qualified female ICR staff member. They may not participate if they are pregnant or breastfeeding. The results of this pregnancy test will be kept confidential and will not be disclosed to anyone other than the test subject and the P.I..

The evening before the study is scheduled to begin, the test subject's arms will be measured in the following manner for demarcation of the 250 cm^2 test area:

For Arms:

The subject's elbow will be placed on a flat rigid surface with the forearm held perpendicular to that surface. A mark will be made on the upper forearm 3" from the flat surface. A second mark will be made on the lower forearm at a point just below the wrist bone. The circumference of the arm will be measured at each of these points. The average of the two circumferences will be calculated. This represents the approximate circumference at the center point between the two marks. A third mark will be made at the center point between the two marks. The average circumference will be divided into 250cm^2, the total exposed surface area required for the test. This will yield the length of arm required to be exposed. The end points of this length of exposure area will be marked on the forearm so that each end point is equidistant from the center point. The endpoint measurements from the center point will be recorded so that they may be duplicated in the field. The distance from the tip of the little finger to the center point will be measured and also recorded so that the center point may be duplicated in the field.

The above mentioned measurements will be recorded on a repellent measurement form. If a test subject has been previously measured, the existing measurements will be used.

Prior to arrival at the field test site, the twelve test subjects and the two controls will wash their arms with unscented Neutrogena® soap. The test subjects and the control subjects will have 250 cm^2 areas delineated around their forearms and these arms will be prepared for treatment. The skin above and below the target area will be protected with elastic bandages and or Velcro® straps held in place with Elastikon® tape. Arms will be protected by shirt sleeves. Latex or vinyl gloves will be given to the

subjects to protect their hands. Head nets will also be supplied to protect their heads and necks. The control test subjects will follow the same procedure but only on one arm. Determination of which arm the control subjects will use will be randomly selected by flipping a coin.

Treatment Application

The test samples will be ready to use and will be transported to the field, securely stored in a hard-sided carrying case. The repellents will be coded as "A" or "B", and each arm will be labeled on the protective wrap with the code corresponding to the repellent applied. Each test subject will be treated on the right arm with repellent "A" and on their left arm with repellent "B".

In the vicinity of the field test site, the twelve subjects to be treated will roll up their sleeves to their elbows. The test articles will be applied to the test subjects using a syringe (minus needle). The amount of test article applied will be adjusted according to specific gravity to provide 1.67 mg/cm^2. The actual application rate for both of the test samples will be 0.44 ml./cm^2. By applying the test sample in this manner, uniformity of dose for each test subject will be achieved. The hands will be protected with gloves and the ankles by socks. The control subjects will uncover the arm that will be used but will receive no treatment.

Subjects will be treated in pairs. Both members of a pair will be treated with one test sample and then they will be treated with the other test sample. The time of treatment will be the time when the application of the second test sample begins. This time will represent the starting time used for calculation of the protection times afforded by the test samples.

After treatment, each pair will be directed to a screened enclosure, previously erected by ICR staff, where they will wait for approximately 30 minutes before their first 5 minute exposure period to mosquitoes. Approximately 30 minutes after treatment each pair will be escorted by ICR staff to the test area where mosquitoes are present for their first 5 minute exposure period. At the end of 5 minutes this pair will be escorted back to the screened enclosure. As each pair of treated subjects will have a different treatment time, each pair will follow the above procedure at the appropriate time for that particular pair. This same procedure will also be followed for untreated control subjects.

Determination of Landing Rate

Biting pressure during the test day will be determined from the landing rate on the controls' arm during one minute periods for up to five-minutes. Once the landing rate has been confirmed (1 to 10 per minute) the counts will cease when that minute period expires. The landing rate verification will be conducted at, approximately, one-half hour intervals throughout each test day.

A whole body count of mosquito landings on one of the control subjects will be taken at the initiation of the test and then hourly. The whole body count will be conducted by having the designated control subject stand with their arms fully extended away from their sides. An ICR staff will record the number of mosquitoes that land in each of four areas on the test subject. These areas will be defined

by an imaginary line through the midpoint in the front and back of the test subject from their head to the ground. An ICR staff will record the number of mosquitoes that land in one minute (15 seconds for each area). Counts will be taken and recorded to aid in quantifying the mosquito numbers in the test area.

Criteria for Test End Point

Efficacy will be evaluated by intermittent exposure of the test subjects' arms. The treated test subjects will expose their treated arms to mosquitoes for 5 minutes at approximately 30 minute intervals. At the end of each 5 minute exposure period, the treated and control subjects will be escorted back to screened enclosures where they will be seated until the next 5 minute exposure period. The test subjects will expose treated arms until the FCB (when two bites occur on the same arm in the same exposure period, or one bite occurs in each of two consecutive exposure periods, the first bite being the confirmed bite) or until 12 hours have elapsed, whichever occurs first. For the purposes of this test, a bite is defined as a mosquito penetrating the skin with its proboscis and taking sufficient blood to cause its abdomen to swell. When the two bites have occurred as noted above, the test will terminate on that arm.

When the testing is terminated for an arm, test subjects will then roll down their sleeves to cover such discontinued arms. The test will be terminated on a treated arm when a bite is followed by one additional bite (the initial bite and one confirming bite). Each bite must occur within one 5 minute exposure period or one bite must occur in each of two consecutive exposure periods. If the bites do not occur within the specified time, the number of bites required will begin anew.

Once a confirmed bite occurs, the test subjects will stop exposing that arm to mosquitoes. They will then be able to remove the bandages and tape, scratch and wash that arm. If they want to, they can use rubbing alcohol to help stop the itching from the bites they may have received. Caladryl® or Calamine® lotion may also be used.

Criteria for Test Cancellation

The study could be cancelled for several reasons; the first would be inclement weather. If weather conditions on site present unsafe circumstances for test personnel the study will be cancelled. These conditions include severe storm threats, high wind, or threat of lightning.

Additional reasons for test cancellation would be insufficient target insect activity. Any health concerns, the presence of WNV, or test material related reactions could also be reason for cancellation.

On-Site Data Collection

The Study Director, or his designee, will record or ensure that temperature, relative humidity, wind speed and cloud-cover are recorded at least hourly throughout the test. Temperature and relative humidity will be obtained by using a sling psychrometer. The wind speed will be obtained by using

an anemometer and cloud cover will be by a visual estimate. This data will be recorded on the Environmental Data Sheet by an ICR staff member.

The test subjects will be positioned in pairs. Each pair will be seated on a stool approximately 1 to 3 meters apart or the pair may move about by slowly walking in the area, but remaining within approximately 1 to 3 meters of each other. Each test subject will assist their partner in alerting him/her to mosquito landings on hard to see parts of their arms. When a test subject believes a bite is occurring, he/she will notify the Study Director or an ICR staff member for verification. ICR staff have been trained through in-house seminars. Their supervisor will have verified their training to recognize and discern between probes and bites. To ensure data integrity only ICR staff will record the time each bite occurs and any additional data required for this study.

The Study Director, QA representative and the ICR staff assistants will observe test subjects from a distance of approximately 1 to 3 meters. The controls will leave the immediate area as soon as the periodic landing rate has been determined or may remain in the vicinity. When a volunteer believes that a landing has occurred, the Study Director or the ICR assistant will approach close enough to determine when a bite has occurred.

Each test subject will be provided with a stool, a head net, latex or vinyl gloves, and a clip-board and ICR Repellency Test Data Sheets for recording the bites. Only ICR staff will verify and record the time of any bite that occurs.

Mosquitoes landing upon control subjects or ICR staff will be periodically aspirated into 9-dram vials and held for subsequent identification. Specimens will be collected from landings on the ICR staff at both sites and returned to the laboratory for identification by a Board Certified Entomologist.

At the conclusion of the study, ICR staff will inspect the clothing of all test participants for ticks.

CONFIDENTIALITY

The information obtained from test subjects taking part in this test may be used by ICR and its sponsor and may become part of a report. This report will be kept as confidential as possible under local, state and federal law. The test subjects' first name and the first initial of their last name only may be referenced. ICR cannot guarantee that their identity will be kept confidential. Essex Institutional Review Board has the right to review their records.

DATA ANALYSIS:

Efficacy data will be reported as Protection Time which is the mean hours and minutes to FCB or test termination. We will calculate the time of complete protection for the test repellents. Therefore, the time to first confirmed bite for all treated test subjects will be averaged and the standard deviation computed. A 95% confidence limit will be determined. If a test subject protection time appears to be an "outlier" (one that appears to deviate markedly from the other members of the sample in which it occurs), that data will be subjected to the test for outlying observations as described in ASTM E 178-94 "Standard Practice for Dealing With Outlying Observations". If the test indicates that the observation is an outlier, that data point will be discarded.

If a test subject wishes to drop out of the study before the stated end point, the data from that test subject will not be used in calculating the mean PT of the test repellent. Any treated arms that do not breakdown within the twelve hour time frame of the study will be given a value of twelve for PT. All data will be entered into a CoStat program for the calculation of the standard deviation and the 95% confidence limit.

QAU AND DATA ARCHIVING

Good Laboratory Practices will be followed throughout the study. The QAU representative will observe and write phase report(s) for this study. All data will be archived.

SCHEDULE OF EVENTS

DATE	PROCEDURE
Time Zero	Test Conducted
At End of Test	Verbal Report
After The Field Test Conduct	Written Report
After Final Report Has Been Issued	Samples Returned

STATEMENT OF AMENDMENT OR DEVIATION

Any amendments to this protocol must be discussed with and approved by the Sponsor. Any amendments to, or deviations from, this protocol will be documented in the final report.

Director, ICR, Inc. — Date: 3/28/07

QAU Representative — Date: 3/28/07

Study Director — Date: 3-28-07

[redacted] — Sponsor's Representative — Date: 3-27-07

APPENDIX II: DATA COLLECTION SHEETS

CONTROL RAW DATA COLLECTION SHEET

SESSION:_____ LOCATION:_____
DATE:_____ START TIME:_____ A.M./P.M.
TEST SUBJECT:_____ STUDY DIRECTOR: NICK C. SPERO
STUDY ASSOCIATES: T. FOARD D. HOSTETTER J. SHARPE C. JOHNSON

Time (hrs)	# of Landings on Arm	Time Required to Verify Landing Rate
0		
0.5		
1		
1.5		
2		
2.5		
3		
3.5		
4		
4.5		
5		
5.5		
6		
6.5		
7		
7.5		
8		
8.5		
9		
9.5		
10		
10.5		
11		
11.5		
12		

Signatures of Study Associates Recording data on this sheet/date:

_____
_____
_____
_____

Study Director's Signature/Date

_____

Test Subject's Signature/Date

_____

TREATMENT RAW DATA COLLECTION SHEET

SESSION:_____ LOCATION:_____

DATE:_____ START TIME:_____A.M./P.M.

TEST SUBJECT:_____ STUDY DIRECTOR: NICK C. SPERO

STUDY ASSOCIATES: T. FOARD D. HOSTETTER J. SHARPE C. JOHNSON

COMPOUND: A AMT. APPLIED: _____ APPLIED BY (INT.) _____ METHOD OF APPLICATION: SYRINGE MINUS NEEDLE	COMPOUND: B AMT. APPLIED: _____ APPLIED BY (INT.) _____ METHOD OF APPLICATION: SYRINGE MINUS NEEDLE
RIGHT ARM	LEFT ARM
TIME OF BITE	TIME OF BITE

Signatures of Study Associates Recording data on this sheet/date:

_____

_____

_____

_____

Study Director's Signature/Date

_____

Test Subject's Signature/Date

_____

ENVIRONMENTAL DATA COLLECTION SHEET

SESSION:_____ LOCATION:_____

DATE:_____ START TIME :_____A.M./P.M.

RECORDER'S SIGNATURE:_____ STUDY DIRECTOR: NICK C. SPERO

STUDY ASSOCIATES: T. FOARD D. HOSTETTER J. SHARPE C. JOHNSON

SLING PSYCHROMETER#:_____ TURBO METER#:_____

ENVIRONMENTAL DATA					
TIME IN HOURS	TEMP ° F DRY	TEMP ° F WET	RELATIVE HUMIDITY	CLOUD COVER	WIND MPH
0					
0.5					
1.0					
1.5					
2.0					
2.5					
3					
3.5					
4					
4.5					
5					
5.5					
6					
6.5					
7					
7.5					
8					
8.5					
9					
9.5					
10					
10.5					
11					
11.5					
12					

Signatures of Study Associates Recording data on this sheet/date:

_____

_____

_____

_____

Study Director's Signature/Date

_____

Test Subject's Signature/Date

_____

WHOLE BODY COUNT DATA COLLECTION SHEET

SESSION:_____ LOCATION:_____

DATE:_____ START TIME:_____ A.M./P.M.

TEST SUBJECT:_____ STUDY DIRECTOR: NICK C. SPERO

STUDY ASSOCIATES: T. FOARD D. HOSTETTER J. SHARPE C. JOHNSON

TIME	# OF LANDINGS ON WHOLE BODY
0 (Start)	
1.0 hour	
2.0 hours	
3.0 hours	
4.0 hours	
5.0 hours	
6.0 hours	
7.0 hours	
8.0 hours	
9.0 hours	
10.0 hours	
11.0 hours	
12.0 hours	

Signatures of Study Associates Recording data on this sheet/date:

_____

_____

_____

_____

Study Director's Signature/Date

_____

Test Subject's Signature/Date

_____

Repellent Measurements–Arm

SUBJECT:_____

DATE:_____

LEFT ARM

LOWER ARM =_____

AVG =_____ $\frac{250\text{ cm}}{2}$ = _____ = _____

UPPER ARM =_____

CENTER POINT = DISTANCE FROM LARGE TO SMALL CIRCUMFERENCE $\frac{\text{_____ cm.}}{2}$ = _____

DISTANCE FROM CENTER POINT TO FLOOR _____

DISTANCE FROM EITHER SIDE OF CENTER POINT _____

RIGHT ARM

LOWER ARM =_____

AVG =_____ $\frac{250\text{ cm}}{2}$ = _____ = _____

UPPER ARM =_____

CENTER POINT = DISTANCE FROM LARGE TO SMALL CIRCUMFERENCE $\frac{\text{_____ cm.}}{2}$ = _____

DISTANCE FROM CENTER POINT TO FLOOR _____

DISTANCE FROM EITHER SIDE OF CENTER POINT _____

DATA TRANSFER VERIFIED BY:_____ DATE:_____

SUBJECT Informed Consent Document Template for Review by Essex Institutional Review Board

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT EVALUATION IN THE FIELD

Principal Investigator: Niketas C Spero
Address:

Telephone Number:
24 Hour Emergency Number: 443-865-6032

Purpose of Study

We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, you will receive a copy of your signed ICD.

Suitability Checklist for the Study

To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over the counter pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.
4. You must not be a full time employee of ICR, Inc.
5. You must be willing to follow the requirements of the study as will be explained to you

below.

6. You must have been bitten by at least one mosquito in the past five years.
7. You must be comfortable with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 people (test subjects) who will participate in the one-day study. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and after we fully discuss it with you via phone, you may sign the ICD, have your signature witnessed by someone else, and fax the signed ICD to us.
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging.

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you

where and when we will meet the following morning to begin the study.

2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.
7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of their arms. When you see a mosquito land on you or your

partner, you will notify us.

9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms.
    The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your limbs for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes
   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

   We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of

clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which land on your bandages, rather than on your skin, and lean over to bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

   The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

   We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any mosquito-borne diseases have been reported in the area. We will minimize your contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray.

3. Reaction to the test repellents

   You may have a reaction to the test repellents.

   The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary.

Test subject's initials:.....

Date:.....

In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration
We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible.. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits
While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Test subject's initials:.....

Date:.....

Questions

If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or complaints, you can ask the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality

We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; Essex Institutional Review Board has the right to review your records.

Consent

I voluntarily agree to participate in this study. I will be given a copy of this signed form.
I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

Signature of Subject Date

Signature of Witness Date

Printed Name of Subject Date

Signature of Principal Investigator Date

SUBJECT Informed Consent Document
For Georgia Test Location

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT EVALUATION IN THE FIELD

Principal Investigator: Niketas C Spero
Address: The Savannah-Ogeechee Canal Museum & Nature Center 618 Fort Argyle Rd. Savannah, Georgia 31419
Telephone Number: 912-748-8068
24 Hour Emergency Number: 443-865-6032

Purpose of Study

We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, you will receive a copy of your signed ICD.

Suitability Checklist for the Study

To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over the counter pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.
4. You must not be a full time employee of ICR, Inc.

Test subject's initials:.....

Date:.....

5. You must be willing to follow the requirements of the study as will be explained to you below.
6. You must have been bitten by at least one mosquito in the past five years.
7. You must be comfortable with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 people (test subjects) who will participate in the one-day study. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and after we fully discuss it with you via phone, you may sign the ICD, have your signature witnessed by someone else, and fax the signed ICD to us.
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging.

Test subject's initials:.....

Date:.....

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you where and when we will meet the following morning to begin the study.
2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.
7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly

walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of their arms. When you see a mosquito land on you or your partner, you will notify us.

9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms. The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your limbs for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes
   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

Test subject's initials:.....

Date:.....

We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which land on your bandages, rather than on your skin, and lean over to bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

Georgia reported 8 cases of WNV, one case of Eastern Equine Encephalitis, one case of La Crosse Encephalitis in 2006. The La Crosse Encephalitis affects predominantly children under the age of 16. Of the 8 cases of WNV in Georgia, one incidence was reported for Chatham County, the Georgia site of the study.

We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any mosquito-borne diseases have been reported in the area. We will minimize your contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray.

3. Reaction to the test repellents

You may have a reaction to the test repellents.

The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The

Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary. In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration
We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible.. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits
While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Test subject's initials:.....

Date:.....

Questions
If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or complaints, you can ask the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality
We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; Essex Institutional Review Board has the right to review your records.

Consent
I voluntarily agree to participate in this study. I will be given a copy of this signed form.
I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

_____ _____
Signature of Subject Date Signature of Witness Date

_____
Printed Name of Subject Date

_____
Signature of Principal Investigator Date

SUBJECT Informed Consent Document
For Florida Test Location

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT EVALUATION IN THE FIELD

Principal Investigator: Niketas C Spero
Address: Pine Island, Florida Lee County Mosquito Abatement District

Telephone Number: 941-694-2174 / 941-283-12548
24 Hour Emergency Number: 443-865-6032

Purpose of Study

We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, you will receive a copy of your signed ICD.

Suitability Checklist for the Study

To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over the counter pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.
4. You must not be a full time employee of ICR, Inc.

Test subject's initials:.....

Date:.....

5. You must be willing to follow the requirements of the study as will be explained to you below.
6. You must have been bitten by at least one mosquito in the past five years.
7. You must be comfortable with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 people (test subjects) who will participate in the one-day study. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and after we fully discuss it with you via phone, you may sign the ICD, have your signature witnessed by someone else, and fax the signed ICD to us.
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging.

Test subject's initials:.....

Date:.....

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you where and when we will meet the following morning to begin the study.
2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.
7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly

walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of their arms. When you see a mosquito land on you or your partner, you will notify us.

9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms. The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your limbs for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes

   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

Test subject's initials:.....

Date:.....

We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which land on your bandages, rather than on your skin, and lean over to bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

Florida reported 3 cases of WNV, one case of Eastern Equine Encephalitis, and no other arbovirus type cases in 2006. None of these cases occurred in Lee County, Florida, the proposed study site.

We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any mosquito-borne diseases have been reported in the area. We will minimize your contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray.

3. Reaction to the test repellents

You may have a reaction to the test repellents.

The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has

selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary. In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration
We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible.. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits
While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Test subject's initials:.....

Date:.....

Questions
If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or complaints, you can ask the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality
We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; Essex Institutional Review Board has the right to review your records.

Consent
I voluntarily agree to participate in this study. I will be given a copy of this signed form.
I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

_____ _____
Signature of Subject Date Signature of Witness Date

_____
Printed Name of Subject Date

_____
Signature of Principal Investigator Date

Additional Materials:

Site Application Letters with Attachments
Resumes/CVs of sub-investigators
Material Safety Data Sheets for Test Materials
Indemnification Form
Investigator Attestation
Investigator Conflict of Interest Declaration

SITE APPLICATION LETTER

Date March 26, 2007

Chairman
Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833-2162

In connection with the **[Sponsor]** [redacted] clinical research project, entitled:

[Protocol Title] Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field, Version Date March 26, 2007

and **[Protocol number]** Protocol No. G0590307001A044

application is being made to the Essex Institutional Review Board for review under the provisions of 21 CFR 50, 21 CFR 56, 45 CFR 46, and 40 CRF 26.

The following information will assist the Essex IRB review of your request. All questions must be answered completely.

You must transmit this letter for each site requesting review and approval.

1. ☐ A Form 1572 (if applicable to this study) listing each research site is attached.

   ☑ A Form 1572 is not applicable to this study. A copy of the Investigator Attestation Form is attached.

   ☐ A copy of a valid IND, when one is required. A copy of the Form 1572 or a copy of the Investigator Attestation Form is attached.

   ☐ For device study, attach IDE letter from the FDA or statement supporting non-significant risks or why exempt from IDE requirements under 21 CFR 812.2 or otherwise exempt. A copy of the Investigator Attestation Form is attached.

2a. **Research Site: (Complete a separate letter for each site seeking approval.)**

Name: The Savannah-Ogeechee Canal Museum & Nature Center

Address: 618 Fort Argyle Road
Savannah Georgia 31419

Office Phone: 912-748-8068 Fax: n/a 24 Hour Emergency Number n/a

How many clinical research studies are currently underway at this site? None

SITE APPLICATION LETTER

2b. A site should ensure that adequate medical care is provided to subjects for any adverse events. Does the site have a policy and provisions for handling adverse reactions, including abnormal lab results related to the trial?

☑ Yes

☐ No (Please explain)_____

3. Can the principal investigator be reached 24-hours a day? (**NOTE**: Answering machines not acceptable)

☑ Yes

☐ No (Please explain)_____

4. **Hospital to be used in an emergency:** **Distance from site:** 10 miles

Name: St. Joseph Candler Health System

Address: 5353 Reynolds Street
Savannah Ga. 31405

Phone: 912-692-6000

Is this hospital equipped to handle adverse reactions?

☑ Yes

☐ No

5. The research site listed in question 2a is [check all boxes that apply]:

a) ☐ Independent private practice(s).

b) ☐ Private practice(s) located within a hospital or teaching institution.

c) ☐ Hospital(s) or teaching institution(s) **without** a local IRB.

d) ☑ Other [specify]: contract testing laboratory

[if only 5a, 5b, 5c and/or 5d are selected, skip to question 7]

e) ☐ Hospital(s) or teaching institution(s) with a local IRB.

6. The local IRB could have jurisdiction over this study. ☐ Yes *[if yes, attach local IRB waiver letter]* ☑ No

SITE APPLICATION LETTER

7. The local IRB has restrictions on independent IRB approval of this study for the listed site. ☐ Yes *[if yes, attach listing of restrictions]* ☑ No

8. Has this protocol been submitted to, reviewed by, disapproved, terminated and/or withdrawn from another IRB? ☐ Yes [if yes, attach IRB findings] ☑ No

9. Is there a local community attitude that could impact on the manner in which your study will be conducted? ☐ Yes [if yes, attach listing of attitudes] ☑ No

10. Please provide the names of the sub-investigators in this study. **If none, please write "NONE".** (This includes any individual member of the clinical trial team designated and supervised by the investigator at a trial site to perform critical trial-related procedures and/or to make important trial –related decisions.) (If necessary, please attach an addendum providing the names of the sub-investigators)

NOTE: These names must be listed on the 1572 form [Box 6], if required by this study type.

Include resume(s) and current license(s)/certification.

Timothy Foard, Donald Hostetter, John Sharpe, and Christy Johnson
(CVs are on file at Essex IRB)

11. Do you personally attend to research participants at this site? ☑ Yes ☐ No

If "No", list the names of those who attend the participants: _____

Include resume(s) and current license(s)/certification.

12. In your absence, research-related medical emergencies are handled by which healthcare giver?

A designated company representative (Timothy Foard)

Include resume(s) and current license(s)/certification.

13. a. How will you identify and recruit potential subjects? _____

When a study date is established, ICR contacts potential study subjects by phone.

b. Will there be any bonus payment for recruiting participants? ☐ Yes ☑ No

If yes, please explain and submit amounts:

SITE APPLICATION LETTER

14. Will subjects be eligible to participate in any additional studies during this trial?

☐ Yes **(Please explain)** ☑ No

15. Please provide information about the planned methods for obtaining informed consent.

I. When will the consent process take place? prior to departure to field location

II. Where will the consent process take place? Either via telephone, or in person at ICR

III. How will you verify whether the subject understands or has the capacity to comprehend what has been explained the consent process?

Subjects will have time to ask questions, and decline to participate if they choose. The principal investigator will ask if informed consent is understood, and if subjects will sign to verify comprehension & acceptance.

IV. Will you provide the opportunity for the prospective subjects to consider whether or not to participate? ☑ **Yes** ☐ **No (Please explain)**

V. For studies of greater than one year duration, will you be reviewing the consent form again with the subject? ☐ **Yes** ☑ **No (Please explain)**

N/A Our studies only last parts of one or two weeks.

16. Please list the individuals other than the principal investigator and sub-investigator(s) as requested below. If none, please write "NONE". **Include resume(s) and current license(s)/certification.**

a. Individual(s) who will administer the consent form at this site:

.none

b. Individual(s) involved with this study (include responsibility):

17. a. Will a non-English consent form be required for your study population? ☐ **Yes** ☑ **No (skip to Q. 18)**

b. If so, what language(s)? _____

Would you like Essex IRB to contract for this service? ☐ **Yes** ☐ **No**

If **"Yes"**, consult the Essex IRB Fee Schedule for estimated fees.
If **"No"**, consult the "submission guidelines" for translation certification required.

SITE APPLICATION LETTER

18.	Has the Food and Drug Administration inspected this site?	☐ Yes (Continue with next question)	☑ No (Skip to Q. 19)
	If inspected, was a Form 483 issued at the end of the inspection?	☐ Yes (if yes, attach copy of the Form 483 & related correspondence for Board review)	☐ No (if no, attach any related correspondence with the FDA for verification)
	Was a Warning Letter subsequently issued?	☐ Yes (If yes, attach copy(ies) of all correspondence for Board review)	☐ No
19.	Has the FDA, OHRP or any regulatory agency, a Sponsor, or an IRB ever terminated a study at this site?	☐ Yes (If yes, attach explanation for Board review)	☑ No
20.	Does this site have established, written standard operating procedures?	☑ Yes	☐ No
21.	a. Does this site have ongoing training for investigators and staff in clinical research procedures? If yes, please provide documentation (ACRP, NIH, etc.).	☑ Yes	☐ No
	b. Does anyone plan to become certified?	☑ Yes	☐ No
	c. May we assist anyone in obtaining certification?	☐ Yes	☑ No

22. We need to know if you or anyone involved with this research has any financial or nonfinancial conflict of interest (COI) that could compromise or lessen the safety and welfare of subjects who enroll in the study. Please complete the separate Investigator Conflict of Interest Form and submit with this form.

The threshold amount is $50,000 or more equity in the sponsor. If you qualify for a COI, please attach a separate sheet to describe how it will be managed and who will have the authority to impose those measures, how subjects and others will be informed and whether you have a COI Committee or equivalent backed by policies and procedures.

SITE APPLICATION LETTER

23. CERTIFICATION –

Your signature below certifies that:

a) Selection of participants for the above research study will be on an equitable basis and that all participants will be treated fairly;

b) informed consent will be sought from each prospective participant or the participant's legally authorized representative;

c) the research site listed in question 2a is appropriately equipped to handle adverse reactions should they occur;

d) adverse reactions and unexpected events will be reported to the Sponsor (for notification to the FDA and other investigators), with a copy forwarded to the IRB within 15 working days after the event;

e) any FDA site audits leading to a Form 483 or Warning Letter will be promptly reported to Essex IRB for its review and determination of adequacy of responses and corrective actions;

f) any participant recruitment material (which includes but is not limited to printed media; video and audio tape; and Web site pages and information) will be submitted to the IRB for review and approval prior to its release to the study population;

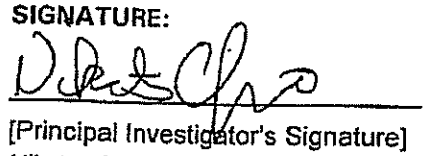
g) you shall provide a periodic, continuing review report prior to the expiration date of the approval and a final report no later than 90 days after completion of your participation in the study (last study participant contact); and,

h) you have examined this application letter and any accompanying documentation, and to the best of your knowledge and belief, they are true, correct and complete.

i) State laws shall be observed during the conduct of the study.

j) **You will not commence any research activity until you have received approval to do so by Essex IRB.**

SIGNATURE:



3-28-07

[Principal Investigator's Signature] [Date]

Niketas C. Spero B.S.

[Printed Name and Degrees]

DOCUMENT MAILING ADDRESS:

ICR, Inc. 1330 Dillon Heights Avenue

[office street address 1]

[office street address 2]

Baltimore, MD 21228

[city, state, ZIP code]

410-747-4500 / 410-747-4928

[phone number] [fax number]

NSpero@icrlab.com Niketas C. Spero

e-mail address and name of Study Contact Person

SITE APPLICATION LETTER

Date March 26, 2007

Chairman
Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833-2162

In connection with the **[Sponsor]** [redacted] clinical research project, entitled:

[Protocol Title] Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field, Version Date March 26, 2007

and **[Protocol number]** Protocol No. G0590307001A044

application is being made to the Essex Institutional Review Board for review under the provisions of 21 CFR 50, 21 CFR 56, 45 CFR 46, and 40 CRF 26.

The following information will assist the Essex IRB review of your request. All questions must be answered completely.

You must transmit this letter for each site requesting review and approval.

1. ☐ A Form 1572 (if applicable to this study) listing each research site is attached.

   ☑ A Form 1572 is not applicable to this study. A copy of the Investigator Attestation Form is attached.

   ☐ A copy of a valid IND, when one is required. A copy of the Form 1572 or a copy of the Investigator Attestation Form is attached.

   ☐ For device study, attach IDE letter from the FDA or statement supporting non-significant risks or why exempt from IDE requirements under 21 CFR 812.2 or otherwise exempt. A copy of the Investigator Attestation Form is attached.

2a. **Research Site: (Complete a separate letter for each site seeking approval.)**

Name: Pine Island Florida

Address: Lee County Mosquito Abatement District (MAD)
MAD Director Mr. Wayne Gale (239-694-2174)

Office Phone: 239-283-1254 Fax: n/a 24 Hour Emergency Number n/a

How many clinical research studies are currently underway at this site? None

SITE APPLICATION LETTER

2b. A site should ensure that adequate medical care is provided to subjects for any adverse events. Does the site have a policy and provisions for handling adverse reactions, including abnormal lab results related to the trial?

☑ Yes

☐ No (Please explain)_____

3. Can the principal investigator be reached 24-hours a day? (**NOTE**: Answering machines not acceptable)

☑ Yes

☐ No (Please explain)_____

4. **Hospital to be used in an emergency:** **Distance from site:** 25 miles

Name: Cape Coral Hospital

Address: 636 Del Pardo Blvd.
Cape Coral, Florida 33904

Phone: 239-574-2323

Is this hospital equipped to handle adverse reactions?

☑ Yes

☐ No

5. The research site listed in question 2a is [check all boxes that apply]:

a) ☐ Independent private practice(s).

b) ☐ Private practice(s) located within a hospital or teaching institution.

c) ☐ Hospital(s) or teaching institution(s) **without** a local IRB.

d) ☑ Other [specify]: contract testing laboratory

[if only 5a, 5b, 5c and/or 5d are selected, skip to question 7]

e) ☐ Hospital(s) or teaching institution(s) with a local IRB.

6. The local IRB could have jurisdiction over this study. ☐ Yes *[if yes, attach local IRB waiver letter]* ☑ No

SITE APPLICATION LETTER

7. The local IRB has restrictions on independent IRB approval of this study for the listed site. ☐ Yes *[if yes, attach listing of restrictions]* ☑ No

8. Has this protocol been submitted to, reviewed by, disapproved, terminated and/or withdrawn from another IRB? ☐ Yes [if yes, attach IRB findings] ☑ No

9. Is there a local community attitude that could impact on the manner in which your study will be conducted? ☐ Yes [if yes, attach listing of attitudes] ☑ No

10. Please provide the names of the sub-investigators in this study. **If none, please write "NONE".** (This includes any individual member of the clinical trial team designated and supervised by the investigator at a trial site to perform critical trial-related procedures and/or to make important trial –related decisions.) (If necessary, please attach an addendum providing the names of the sub-investigators)

NOTE: These names must be listed on the 1572 form [Box 6], if required by this study type.

Timothy Foard, Donald Hostetter, John Sharpe, and Christy Johnson
(CVs are on file at Essex IRB)

Include resume(s) and current license(s)/certification.

11. Do you personally attend to research participants at this site? ☑ Yes ☐ No

If "**No**", list the names of those who attend the participants: _____

Include resume(s) and current license(s)/certification.

12. In your absence, research-related medical emergencies are handled by which healthcare giver?

A designated company representative (Timothy Foard)

Include resume(s) and current license(s)/certification.

13. a. How will you identify and recruit potential subjects? _____

When a study date is established, ICR contacts potential study subjects by phone.

b. Will there be any bonus payment for recruiting participants? ☐ Yes ☑ No

If yes, please explain and submit amounts:

SITE APPLICATION LETTER

14. Will subjects be eligible to participate in any additional studies during this trial?

☐ Yes **(Please explain)** ☑ No

15. Please provide information about the planned methods for obtaining informed consent.

I. When will the consent process take place? prior to departure to field location

II. Where will the consent process take place? Either via telephone, or in person at ICR

III. How will you verify whether the subject understands or has the capacity to comprehend what has been explained the consent process?

Subjects will have time to ask questions, and decline to participate if they choose. The principal investigator will ask if informed consent is understood, and if subjects will sign to verify comprehension & acceptance.

IV. Will you provide the opportunity for the prospective subjects to consider whether or not to participate? ☑ Yes ☐ **No (Please explain)**

V. For studies of greater than one year duration, will you be reviewing the consent form again with the subject? ☐ Yes ☑ **No (Please explain)**

N/A Our studies only last parts of one or two weeks.

16. Please list the individuals other than the principal investigator and sub-investigator(s) as requested below. If none, please write "NONE". **Include resume(s) and current license(s)/certification.**

a. Individual(s) who will administer the consent form at this site:

none

b. Individual(s) involved with this study (include responsibility):

17. a. Will a non-English consent form be required for your study population? ☐ Yes ☑ **No (skip to Q. 18)**

b. If so, what language(s)? _____

Would you like Essex IRB to contract for this service? ☐ Yes ☐ No

If **"Yes"**, consult the Essex IRB Fee Schedule for estimated fees.
If **"No"**, consult the "submission guidelines" for translation certification required.

SITE APPLICATION LETTER

18.	Has the Food and Drug Administration inspected this site?	☐ Yes (Continue with next question)	☑ No (Skip to Q. 19)
	If inspected, was a Form 483 issued at the end of the inspection?	☐ Yes (if yes, attach copy of the Form 483 & related correspondence for Board review)	☐ No (if no, attach any related correspondence with the FDA for verification)
	Was a Warning Letter subsequently issued?	☐ Yes (If yes, attach copy(ies) of all correspondence for Board review)	☐ No
19.	Has the FDA, OHRP or any regulatory agency, a Sponsor, or an IRB ever terminated a study at this site?	☐ Yes (If yes, attach explanation for Board review)	☑ No
20.	Does this site have established, written standard operating procedures?	☑ Yes	☐ No
21. a.	Does this site have ongoing training for investigators and staff in clinical research procedures? If yes, please provide documentation (ACRP, NIH, etc.).	☑ Yes	☐ No
b.	Does anyone plan to become certified?	☑ Yes	☐ No
c.	May we assist anyone in obtaining certification?	☐ Yes	☑ No

22. We need to know if you or anyone involved with this research has any financial or nonfinancial conflict of interest (COI) that could compromise or lessen the safety and welfare of subjects who enroll in the study. Please complete the separate Investigator Conflict of Interest Form and submit with this form.

The threshold amount is $50,000 or more equity in the sponsor. If you qualify for a COI, please attach a separate sheet to describe how it will be managed and who will have the authority to impose those measures, how subjects and others will be informed and whether you have a COI Committee or equivalent backed by policies and procedures.

SITE APPLICATION LETTER

23. CERTIFICATION –

Your signature below certifies that:

a) Selection of participants for the above research study will be on an equitable basis and that all participants will be treated fairly;

b) informed consent will be sought from each prospective participant or the participant's legally authorized representative;

c) the research site listed in question 2a is appropriately equipped to handle adverse reactions should they occur;

d) adverse reactions and unexpected events will be reported to the Sponsor (for notification to the FDA and other investigators), with a copy forwarded to the IRB within 15 working days after the event;

e) any FDA site audits leading to a Form 483 or Warning Letter will be promptly reported to Essex IRB for its review and determination of adequacy of responses and corrective actions;

f) any participant recruitment material (which includes but is not limited to printed media; video and audio tape; and Web site pages and information) will be submitted to the IRB for review and approval prior to its release to the study population;

g) you shall provide a periodic, continuing review report prior to the expiration date of the approval and a final report no later than 90 days after completion of your participation in the study (last study participant contact); and,

h) you have examined this application letter and any accompanying documentation, and to the best of your knowledge and belief, they are true, correct and complete.

i) State laws shall be observed during the conduct of the study.

j) You will not commence any research activity until you have received approval to do so by Essex IRB.

SIGNATURE:

3-28-07

[Principal Investigator's Signature] [Date]

Niketas C. Spero B.S.

[Printed Name and Degrees]

DOCUMENT MAILING ADDRESS:

ICR, Inc. 1330 Dillon Heights Avenue

[office street address 1]

[office street address 2]

Baltimore, MD 21228

[city, state, ZIP code]

410-747-4500 / 410-747-4928

[phone number] [fax number]

NSpero@icrlab.com Niketas C. Spero

e-mail address and name of Study Contact Person

[redacted]

24 Hour Emergency: [redacted]
Date Prepared: July 28, 2006
TA# 1003715-019

MATERIAL SAFETY DATA SHEET

I. PRODUCT NAME
TA# 1003715-019

II. INGREDIENTS
HAZARDOUS INGREDIENT(S) (as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

NAME	CAS#	HAZARD DATA
SD Alcohol 40B (denatured with Bitrex® [denatonium benzoate])	64-17-5	Flammable; CNS depressant
Picaridin	119515-38-7	Eye Irritant

Ingredients not precisely identified are proprietary or non-hazardous.

PRECAUTIONARY LABEL STATEMENT(S):
FLAMMABLE: KEEP AWAY FROM HEAT OR OPEN FLAME.
WARNING: FOR EXTERNAL USE ONLY.
CAUSES MODERATE EYE IRRITATION. AVOID CONTACT WITH EYES.
DISCONTINUE USE IF IRRITATION OR RASH APPEARS. CONSULT A PHYSICIAN IF IRRITATION OR RASH PERSISTS.
USE ON CHILDREN UNDER 6 MONTHS OF AGE ONLY WITH THE ADVICE OF A PHYSICIAN.

III. HEALTH HAZARD DATA
EFFECTS OF OVER EXPOSURE
SKIN: None expected. Use only as directed.
EYES: This material may cause eye irritation. In accordance with good worker health and safety practices, avoid contact with the eye. Rinse immediately with water if product comes in contact with the eye.
INHALATION: N/A
INGESTION: Ingestion of this product may cause temporary gastric distress.

NA= Not Applicable

[redacted]

24 Hour Emergency: [redacted]
Date Prepared: July 28, 2006
TA# 1003715-019

MATERIAL SAFETY DATA SHEET

IV. FIRST AID PROCEDURES

SKIN: This material is not expected to irritate skin. However, if redness, itching, or a burning sensation should develop, wash material off the skin with soap and water. If irritation persists, seek medical attention.

EYES: Immediately flush with copious amount of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

INHALATION: This material is not expected to present an inhalation hazard or exposure at ambient conditions.

INGESTION: Give one or two glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

V. SPECIAL PROTECTION INFORMATION:

SKIN: N/A. Use only as directed.

EYES: Avoid direct contact with eyes.

INHALATION: N/A

VI. FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method: Flammable

Autoignition Temperature: No data

Flammable Limits: No data

Extinguishing Media: Use water fog, foam, carbon dioxide, dry chemical, alcohol-type or universal-type foams applied by manufacturer's recommended technique to extinguish fire.

Special Fire Fighting Procedure: Keep all unprotected and unnecessary people away.

Unusual Fire and Explosion Hazards: None

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Collect spilled material with vermiculite or other absorbent material. Sweep up and shovel into appropriate waste container.

Do not reuse empty container. Dispose of waste and container in compliance with all federal, state, and local laws concerning health and environmental regulations.

VIII. REACTIVITY DATA

Stability: Stable

Incompatibility (Materials to Avoid): Avoid contact with plastics, such as eyeglass frames, plastic watch crystals, costume jewelry, leather, and synthetic fabrics such as acetate, rayon, spandex, and dynel. May damage painted or varnished surfaces, including nail polish.

Hazardous Decomposition: Thermal decomposition in presence of air may yield carbon monoxide, carbon dioxide, and water vapor.

NA= Not Applicable

[redacted]

24 Hour Emergency: [redacted]
Date Prepared: July 28, 2006
TA# 1003715-019

MATERIAL SAFETY DATA SHEET

IX. PHYSICAL DATA

Boiling Point: NA
Vapor Pressure (mm Hg at 20°C): No data
Solubility in Water: Miscible
Viscosity @ 25°C (Cps): NA
pH @ 25°C: 6.0-8.0 (pH meter)
Specific Gravity (H_2O=1): 0.89 –1.03 (pycnometer)
Appearance and Odor: Water white to pale yellow liquid; Fragrant/ethanolic odor.

NA= Not Applicable

[redacted]

24 Hour Emergency: [redacted]
Date Prepared: July 28, 2006
TA# 1003715-020

MATERIAL SAFETY DATA SHEET

I. PRODUCT NAME
TA# 1003715-020

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HAZARDOUS INGREDIENT(S) (as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

NAME	CAS#	HAZARD DATA
SD Alcohol 40B (denatured with Bitrex® [denatonium benzoate])	64-17-5	Flammable; CNS depressant
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SKIN: None expected. Use only as directed.
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INGESTION: Ingestion of this product may cause temporary gastric distress.

NA= Not Applicable

[redacted]

24 Hour Emergency: [redacted]
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MATERIAL SAFETY DATA SHEET

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Flammable Limits: No data

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Unusual Fire and Explosion Hazards: None

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Hazardous Decomposition: Thermal decomposition in presence of air may yield carbon monoxide, carbon dioxide, and water vapor.

NA= Not Applicable

[redacted]

24 Hour Emergency: [redacted]
Date Prepared: July 28, 2006
TA# 1003715-020

MATERIAL SAFETY DATA SHEET

IX. PHYSICAL DATA

Boiling Point: NA
Vapor Pressure (mm Hg at 20°C): No data
Solubility in Water: Miscible
Viscosity @ 25°C (Cps): NA
pH @ 25°C: 6.0-8.0 (pH meter)
Specific Gravity (H_2O=1): 0.89 – 1.03 (pycnometer)
Appearance and Odor: Water white to pale yellow liquid; Fragrant/ethanolic odor.

The information provided in this Material Safety Data Sheet has been compiled from our experience and data with similar, commercially available materials and is believed to be accurate. No guarantee of accuracy is made. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions.

NA= Not Applicable

March 28, 2007

NIKETAS C. SPERO
ICR, Inc. Baltimore, MD
Tel: 410-747-4500

EDUCATION:

Allegheny Community College		1975-1976	Forestry
Penn State University State College, PA		1977-1978	Forestry
Towson State University Towson, MD	B.S.	1978-1981	Biology/Field & Natural Sci

CERTIFICATIONS

Pest Control Certification No 165-19757	1997-2007

SHORT COURSES/CONFERENCES:

Society of Quality Assurance Annual Meeting	2006
American Mosquito Control Association Annual Meeting	2006
American Mosquito Control Association Annual Meeting	2005
National Safety Councils Adult CPR and First Aid Training and certification	2005
Society of Quality Assurance Annual Meeting	2004
MDA Pesticide Safety Course	2002
Hazardous Material Course	2002
American Red Cross Adult CPR and First Aid Training and certification	2002
GLP Essentials For Technical Staff and Quality Assurance	2002
Training On Proper Wearing of The Respirator	2002

Basic Rules and Procedures For Working With Chemicals	2002
Workers Right To Know and Chemical Hazard Inventory and MSDS Information	2002
Hazardous Materials Training	2002
Society of Quality Assurance Annual Meeting	2001
MDA Pesticide Safety Course	2001
MDA Pesticide Safety Course	2000
MDA Pesticide Safety Course	1999
Fed Ex Dangerous Goods Seminar	1999
MDA Pesticide Safety Course	1998
Society of Quality Assurance Annual Meeting	1998
NCARSQA, Quality Assurance and Data Mgmt Forming an Alliance	1996
Society of Quality Assurance Annual Meeting	1996
Society of Quality Assurrance Annual Meeting	1994
CSMA GLP Seminar	1992

PROFESSIONAL EXPERIENCE:

2006-Present	Associate Director of Operations, ICR, Inc.
1983-2006	Laboratory Manager, Insect Control and Research, Inc., Baltimore, MD. Served as study director, managed personnel, supervised the rearing of approximately 48 species of insects.
1978-1983	Spero's Salads, Lexington Market, Baltimore, MD Managed operations and personnel while attending Towson State University.
1976	Koogle and Pouls Engineering, Albuquerque, NM. Worked as Surveyor's Aid.

Niketas C. Spero 3-28-07
Niketas C. Spero Date

March 28, 2007

TIMOTHY FOARD

EDUCATION:

M.S. - Entomology (1995), The University of Georgia, Athens, Georgia

B.S. - Biology (1984), Armstrong Atlantic State University, Savannah, Georgia

CERTIFICATIONS:

Pest Control Applicator Certification No 165-50614	2001 - Present
Adult CPR and Standard First Aid	2003 - Present

EMPLOYMENT:

3/2000 - Present	Entomologist, Insect Control and Research, Inc., Baltimore, Maryland
10/97 - 12/99	Agricultural Research Assistant II, Department of Crop and Soil Sciences, University of Georgia, Athens
2/94 - 9/96	Biological Laboratory Technician, U.S. Department of Agriculture, Russell Research Center, Athens, Georgia
3/87 - 12/92	Biological Laboratory Technician, U.S. Department of Agriculture, Stored Products Insects Research and Development Laboratory, Savannah, Georgia
6/82 - 3/87	Archaeological Field Supervisor/Laboratory Technician, Center for Low Country Studies, Armstrong Atlantic State University, Savannah, Georgia
3/81 - 3/82	Young Adult Conservation Corps (YACC) Worker, Oatland Island Education Center, Savannah, Georgia

TRAINING AND WORKSHOPS:

Entomological Society Of America Annual Meeting	2006
Entomological Society Of America Annual Meeting	2004
Entomological Society Of America Annual Meeting	2003
Entomological Society Of America Annual Meeting	2002
Entomological Society Of America Annual Meeting	2000
GLP Essentials For Technical Staff and Quality Assurance	
GLP Essentials For Technical Staff and Quality Assurance	2006
Training On Proper Wearing of The Respirator	2002
Basic Rules and Procedures For Working With Chemicals	2002
Workers Right To Know and Chemical Hazard Inventory and MSDS Information	2002
Hazardous Materials Training	2002
Hazardous Materials Training	2004
	2002

PROFESSIONAL MEMBERSHIP

Entomological Society of America
Entomological Society of Washington
Maryland Entomological Society

PUBLICATIONS

D. MICHAEL JACKSON, S. F. NOTTINGHAM, W. S. SCHLOTZHAUER, R. J. HORVAT, V. A. SISSON, M. G. STEPHENSON, T. FOARD, AND R. M. McPHERSON, 1996. Abundance of *Cardiochiles nigriceps* (Hymenoptera: Braconidae) on *Nicotiana* Species (Solanaceae). Journal of Environmental Entomology 25 (5): 1248-1255

T. FOARD, 1992. Occurrence of the Acanthocephalan, *Eocollis arcanus* Van Cleave, in Georgia. Journal of Parasitology 78 (4): 734

T. FOARD, AND D. L. AUTH, 1990. Food Habits and Gut Parasites of the Salamander, *Stereochilus marginatus*, in Georgia. Journal of Herpetology 24 (4): 428-431

Timothy Foard 3/28/07 Date

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
WAGRAMERSTRASSE 5, P.O. Box 100, A-1400 VIENNA (AUSTRIA)

TELEPHONE (+431) 2060-0 TELEX: 1-12645/1-13897 ATOM A FACSIMILE: (+431) 20607
E-Mail: OFFICIAL.MAIL@IAEA.ORG

PERSONAL HISTORY FOR ASSIGNMENT AS EXPERT/LECTURER

A- ADMINISTRATIVE INFORMATION

1) Family name	First and middle name:	Former name, if any	
HOSTETTER	DONALD LEE	N/A	MALE
2) Date of birth	Place of birth	Nationality	3) In case of emergency notify:

4) OFFICE ADDRESS

5) HOME ADDRESS

6)

7) Airport/town nearest to residence:
Billings: Logan International Airport, Billings, MT

8) I

9) I do not object to your making inquiries of my present/recent employer.

10) REFERENCES (List two persons not related to you, who are familiar with your character and qualifications)

Name	Address	Telephone	Business/Occupation

11) I certify that the statements made by me in PART A of this form are true, complete and correct to the best of my knowledge and belief. I understand that I might be requested to provide documentary evidence in support of my statements. I will take care of obtaining release from my employer, if necessary.

Date: 27 August 1998 Signature: [signature]

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

WAGRAMERSTRASSE 5, P.O. Box 100, A-1400 VIENNA (AUSTRIA)

TELEPHONE (+431) 2600-0 TELEX: 1-12645/1-13997 ATOM A FACSIMILE: (+431) 20607
E-Mail: OFFICIAL.MAIL@IAEA.ORG

PERSONAL HISTORY
FOR ASSIGNMENT AS EXPERT/LECTURER

B - PROFESSIONAL INFORMATION

1) Name: Mr. Donald L. Hostetter **Nationality:** United States of America **Date of birth:**

2) KNOWLEDGE OF LANGUAGES

Mother tongue: English

Portuguese	Read: easily	Write: not easily	Speak: not easily	Understand: not easily

3) EDUCATION

From	To	Name/Location of Institution	Academic Degree	Main field of study
1962	1964	SDSU, Brookings, SD	MS	Entomology/Microbiology
1950	1962	SDSU, Brookings, SD	BS	Entomology/Wildlife Conserv.

4) List the specialization's in which you consider yourself qualified

Insect Pathology, Microbial Control of Insects, Integrated Pest Management, & Plant related Entomology.

My research specialty is insect pathology & biological control with emphasis on isolation, identification, and propagation of insect pathogens and their use in field situations.

5) PROFESSIONAL EXPERIENCE:

From: Dec., 1994 To: Dec., 1996 **Title of position:** Consultant/Technical Advisor Japanese Beetle Project

Employer: Regional Director of Agricultural Development
Vinha Brava, 9700 Angra do Heroismo
Azores, Portugal

Number & kind of staff supervised: 5 project engineers; 4 technicians & 5 field workers

Duties: Responsibilities included all aspects of developing operational and research strategies for an integrated pest management program designed for the containment and control of Japanese beetle populations on the island of Terceira. This project was primarily funded by the EEC. I provided technical guidance and direction to 5 project engineers, 4 technicians and 5 field workers in the areas of entomopathogenic nematodes, fungi, parasitoids, ecological studies, and quarantine/chemical control. I initiated and implemented collaborative projects with specialists from federal, state, university and industry within the Azores, USA, and the UK. I initiated and implemented a systematic trapping survey on the Central Group of islands that resulted in the discovery of a Japanese beetle population on the island of Faial, August, 1996. I also drafted and initiated implementation of an action plan for chemical and biological control procedures against the population on Faial. Other duties included technical training of technicians, requisition of laboratory equipment and vehicles, design of a new 1700 sq. meter laboratory and fumigation facility, maintaining inventories of insecticides and application equipment, generation of reports, participation in international scientific meetings, congresses, and symposia and other duties required for the daily administration and management of a research program.

From: Jul., 1987 To: Jul., 1991 **Title of position:** Research Entomologist

Employer: USDA/ARS, Grasshopper IPM Program
Soil & Water Mngmt Research Unit
Kimberly, Idaho

Number & kind of staff supervised: 1 technician, 2 students

Duties: I was responsible for research on parasites and predators of rangeland grasshoppers in support of an interagency IPM experimental demonstration. My research identified key-factor parasites/predators of grasshoppers and quantified the role of dipteran parasites in grasshopper population dynamics. I developed methods for monitoring parasites and implemented on-the-job training in

7) List any lecturing experience you have (topics, duration):

Provided a 12 hour block of instruction, entitled "systematics and biology of insect pathogens" (2d semester 1974-75) for a graduate level course (Biological Control of Insects) at the University of Missouri, Columbia, MO. Also taught the weekly laboratory for this course.

I have delivered 26 invitational presentations and participated in over 50 professional meetings, symposia, congresses, conferences and workshops all of which required oral and written presentations. I have interacted with graduate faculty and students in planning, implementing and interpreting thesis projects and results and provided directed the research of a Masters Degree student (J. A. Grundler, 1985-1987). I have developed and presented blocks of instruction in a wide variety of entomological subjects, in formal and informal settings, in laboratory, university, and military forums. I have been responsible for training technicians, and foreign scientists in the technical aspects of microbial control agents.

8) List specific experience, not given above, related to the transfer of scientific and technical knowledge with special emphasis on developing countries and on project management:

I was selected and appointed by the Regional Director of Agricultural Development, Angra do Heroismo, Terceira, Azores to be the consultant/technical advisor for a Japanese beetle program (Dec., 1994 to Dec., 1995).

Hosted Dr. Oleg N. Naumovich, Acridologist/Systematist), All-Union Institute of Plant Protection, St. Petersburg, Russia who was the invited speaker for the Grasshopper IPM Project Dr. Naumovich's invitation was a direct result of my participation in the SSR. A joint research proposal for cooperative ventures between scientists at the St. Petersburg Institute and USDA, ARS, Rangeland Insect laboratory was drafted and submitted during Dr. Naumovich's visit (Feb., 1991).

I was appointed by USDA, ARS, NPS as an official US representative on a Soviet scientific expedition in Kazakhstan, SSR in search of parasites/pathogens of Acrididae in Central Asia. I was the only non-Soviet member of a nine man expedition led by Dr. Vladimir Kambulin, Director of Locust Research, Institute for Plant Protection, Alma Ata, Kazakhstan. Three other soviet scientists participated along with four technicians. We spent 17 days in the field in the area of Lake Balkash (15 Aug - 16 Sep., 1990).

9) List special qualifications and skills confirmed by licenses held and membership in professional, civic, public or international societies or institutions relevant to your application:

Entomological Society of America
Society for Invertebrate Pathology
American Registry of Professional Entomologists, Board Certified Entomologist since 1993; Registry No. 1670
Sigma Xi (President of local chapter, Twin Falls, ID, 1990)
American Men and Women of Science

John W. Sharpe II
Parkville MD 21234

EDUCATION:

Institution	Year degree earned	Major and/or degree
University of Wisconsin, Madison	1997	B.S. Entomology

OTHER EDUCATION: Training, Short Course, Conference, Presentations, Etc.

West Coast Training Institute	GLP Training Seminar	February 2006
Maryland Dept of Agriculture	Pesticide Applicators License	February 2006
CPR Certification	Baltimore FD	2006

AWARDS, HONORS, CERTIFICATIONS:

EMPLOYMENT AND PROFESSIONAL EXPERIENCE:

2005-Present	Entomologist	ICR, Inc., Baltimore MD 21228
2004-2005	Science Teacher	NOVA High School, Milwaukee WI 53209
2004	Vector Control Specialist	Winnebago County Health Dept., Rockford IL 61104
2003-2004	Operations Manager	²DX, Geothermal Systems Inc., Franklin WI 53132
1998-2003	Co-Owner	Breakaway Bicycle Courier LLC, Milwaukee WI 53203

PUBLICATIONS

3-28-2007

Name Date

CHRISTY E. JOHNSON

Laurel, MD 20723

Education

B.S., Biology, Winthrop University, Rock Hill, South Carolina — May 2004
- Minor: Philosophy and Religion
- GPA 3.1/4.0

Certifications

• American Heart Association	CPR/First Aid	February 2006
• Aerie Backcountry Medicine	Wilderness Advanced First Aid	June 2005
• Student Conservation Assoc.	Off Road Driving	June 2005

Professional Memberships

- South Carolina Entomological Society
- Entomological Society of America
- Association of Southeastern Biologists

Presentations

- Johnson, C. E., C. Francis, and P. L. Mitchell. Antifeedant effects of Asimina triloba extract on milkweed bugs and southern green stink bugs. Presented by P. L. Mitchell at the 50th Annual Meeting of the South Carolina Entomological Society, Columbia, SC, October 2004 (Poster)
- Johnson, C.E. Antifeedant effect of aqueous pawpaw (Annonaceae) extract on milkweed bugs. Presented at the Biennial Convention of the Beta Beta Beta Biological Honor Society, Grand Junction, CO May 2004 (Poster)
- Johnson, C.E. Antifeedant effect of aqueous pawpaw (Annonaceae) extract on milkweed bugs. Presented at the Southeastern District I Convention of the Beta Beta Beta Biological Honor Society, Memphis, TN April 2004 (Poster)
- Johnson, C. E., P.L Mitchell, and J.M. Schmidt. Antifeedant effect of aqueous pawpaw (Annonaceae) extract on milkweed bugs. Presented at the Annual Meeting of the Southeastern Branch of the Entomological Society of America, Charleston, SC February 2004 (Poster)

Grants

- Winthrop University Research Council Grant, 2003
- Beta Beta Beta Biological Honor Society Travel Grant, 2004

Awards & Honors

- Beta Beta Beta Biological Honor Society, 2001-present
- Johnson Award, Beta Beta Beta Biological Honor Society, 2004
- Undergraduate Research Award, Sigma Xi, Charlotte Chapter, 2004

Christy Johnson 3/28/07

Experience

Insect Control & Research, Inc 11/2006–current
Entomologist
Baltimore, MD

- Prepare and design protocols
- Coordinate and conduct studies on insecticides, traps, etc.
- Prepare final reports of studies conducted
- Assist in colony rearing and maintenance

Consortium of Conservation Medicine, Smithsonian 05/2006–10/2006
West Nile Virus Mosquito Technician
Washington, DC

- Collected mosquitoes using CDC light traps, gravid traps, and backpack aspirators
- Identified mosquito species
- Sorted mosquitoes into pools for West Nile Virus testing
- Provided training in mosquito identification

USGS, Pacific Island Ecosystems Research Center 01/2006–05/2006
Entomology Intern
Hawaii National Park, HI

- Identified insects using dichotomous keys
- Pinned insects for collection
- Surveyed spread of invasive ant species by using pan traps
- Collected other insects using malaise traps and aspirators
- Assisted with vegetation surveys and bird point counts

SCA Landfire, Bureau of Land Management 06/2005–12/2005
Conservation Intern (Landfire is a nationwide fire and fuels mapping project)
Boise, ID

- Conducted vegetation and fuel surveys around Wyoming and southern California.
- Identified plant species using dichotomous keys
- Camped backcountry for ten days at a time
- Contacted agencies and homeowners

Christy Johnson

Experience-Con't

SC Department of Health and Environmental Control Summer 2004
Laboratory Specialist I
Columbia, SC

- Identified mosquito species
- Prepared samples for arbovirus testing
- Set up mosquito traps and gravid traps
- Maintained and organized mosquito data

Winthrop University, Department of Biology 01/2003–04/2004
Research Assistant
Rock Hill, SC

- Conducted Botanical Extract Pest Management Research Project
- Maintained an insect colony
- Prepared botanical extract
- Prepared Acid Fuschin staining solution
- Presentation of results won 1st place at Regional Beta Beta Beta Southeastern Convention

Professional Activities

- President, Psi Chapter, Winthrop University, Beta Beta Beta Biological Honor Society 2003-2004
- Treasurer, Student Environmental Council, Winthrop University 2003-2004
- Treasurer, Psi Chapter, Winthrop University, Beta Beta Beta Biological Honor Society 2002-2003

Publications

- Johnson, C. E. 2004. Antifeedant effect of aqueous pawpaw (Annonaceae) extract on milkweed bugs. (abstract) Southeastern Biologist 51(3): 355-356 September 2004

Christy Johnson

Indemnification Agreement
Between
[redacted]
and
INSECT CONTROL & RESEARCH, INC.

[redacted] agrees to hold harmless **Insect Control & Research, Inc.** ("ICR") from any claims of injury or illness resulting from the development, evaluation and implementation of Protocol No. G0590307001A044 , entitled Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field only under the following circumstances:

If any undesirable side effect or reaction occurs following the administration of the test product(s), and if ICR has employed reasonable care in the development of the protocol and has not violated any local, state or federal laws pertaining to the administration of chemical substances, medical devices, drugs or biological agents, including but not limited to the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, and the Federal Food, Drug and Cosmetic Act of 1938, as amended, and the regulations promulgated pursuant thereto, [redacted] shall indemnify and hold harmless ICR against any and all claims, lawsuits and judgements thereon (including reasonable attorney's fees through the appellate level) which may be brought against it as a result of the development or implementation of the protocol.

In the event any such claim is made or lawsuit is initiated, ICR shall give prompt written notice thereof to [redacted], shall permit [redacted] or its insurance carrier to defend such claim or lawsuit, and shall cooperate fully in any such defense.

Insect Control & Research, Inc.
Accepted By:

Name: Robin G. Todd, PhD, BCE

Title: Director

Date: 3/28/07

[redacted]
Accepted By:

Name: [redacted]

Title: Director Toxicology

Date: 3/27/07

ESSEX INSTITUTIONAL REVIEW BOARD, INC.

Investigator Attestation

Qualifications: I am qualified by education, training and experience to assume responsibility for the proper conduct of the following research study:

Sponsor name: Avon Products, Incorporated

Protocol name: Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field; dated March 26,2007

Protocol number: G0590307001A044

- Any patients and participants involved in the research shall be informed of the procedures related to the research study, ensuring that consent has been obtained in accordance with 21 CFR 50, as it relates to IRB review and approval.

- Essex IRB is in compliance with 21 CFR 50 and 56 and 45 CFR 46, and is responsible for the initial and continuing review of all changes, recruitment procedures, safety reporting and annual review of the research site(s). The investigator shall promptly report to the Essex IRB any changes in research activity and all unanticipated (adverse) events involving risks to human subjects or others.

- Changes to the research plan and/or participant consent form shall not be made without the approval of Essex IRB, with the exception of the elimination of apparent immediate hazards to human subjects.

- Past performance as an investigator where the Food & Drug Administration (FDA) and/or the Office of Human Research Protection (OHRP) inspection(s) or audit(s) led to recommendations for corrective actions, sanctions, or disqualification (FDA Form 483, FDA Warning Letter, etc.) will be submitted to the Essex IRB, along with documentation of resolution of the issue(s).

- Resources to conduct the research study in a manner providing protection to human participants in the study will be employed, including, but not limited to: adequate qualified staff and facilities; providing information and necessary training with regard to the protocol, the test product, and duties and functions. It is the obligation of the Principal Investigator to oversee all aspects of the study, providing adequate medical (or dental) care, as indicated.

- The Principal Investigator certifies compliance with 21 CFR 54 regulations regarding financial interest in the outcome of the research and to minimize bias in the design, conduct, reporting and analysis of the study. Disclosure of certain financial arrangement with the Sponsor will be made available to the Essex IRB upon request or at site inspection.

Attestation: I will comply with applicable regulatory requirements, ICH Guidelines and Good Clinical Practices. I understand my responsibilities as Principal Investigator in conducting research. I am familiar with human research protection regulations and will strictly adhere to these regulations.

Niketas C. Spero
Printed Name of Principal Investigator

Signature of Principal Investigator

3-28-07
Date

Version Date: January 31, 2007

ESSEX IRB

INVESTIGATOR CONFLICT OF INTEREST DECLARATION

Study title and number: Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field, Version Date March 26, 2007 Protocol No. G0590307001A044

Sponsor: [redacted]

Financial relationships of investigators (or institutions/sites) to sponsors have the potential to adversely affect the rights and welfare of human subjects involved in research. In order to help ensure that such issues do not compromise the results or create hazards for the subjects, Essex IRB requests you to make a declaration regarding any conflict of interest (COI) in the conduct or outcome of the trial. To achieve this, we ask you to answer the following questions and submit a response to any that have a "Yes" reply in a separate letter.

- Do you have any relationship with the sponsor or institution that could cause potential or actual conflict of interest? Yes [ ] No [✓]
  If yes, describe the degree of conflict and with which parties.
- Is there any compensation that your institutional ethics/COI committee has deemed to be a conflict or could affect the outcome of the trial?
  Yes [ ] No [✓] If yes, describe.
- Does anyone involved with the research have proprietary interests in the product, drug or device, including patents, trademarks, copyright and licensing agreements? Yes [ ] No [✓] If yes, describe.
- Does anyone have an equity interest in the research sponsor?
  Yes [ ] No [✓] Describe, if yes.
- Do you receive significant payments, equipment, retainers, incentives, grants or honoraria from the sponsor? Yes [ ] No [✓] If yes, describe.
- Are the payments or incentives you receive per participant considered to be outside the norm? Yes [ ] No [✓] If yes, describe.

You may submit a letter from your institution's COI Committee regarding their determination of any COI in this study. Any recommendations you or they make to reduce or eliminate any COI will be appreciated. Examples of these are: describing any COI in the informed consent form, having an impartial third party obtain consent, reduction or elimination of the financial interest or equity ($50000 or greater), monitoring by an impartial party (independent data and safety committee), or separation of duties or roles (e.g., change of principal investigator). Violation of this declaration may result in it being reported to the FDA or OHRP (Office for Human Research Protection), as well as, our terminating approval for you to conduct this research study.

We thank you for indulgence in completing this document. If you have any questions, please contact us.

Principal Investigator's Printed Name: Niketas C. Spero

Signature: Niketas C Spero Date: 3·28·07

Version Date: January 31, 2007

Initial Essex IRB Review of Submitted Materials

Essex IRB Response to ICR and Meeting Minutes

Essex Institutional Review Board, Inc.
121 Main Street • Lebanon, New Jersey 08833
Telephone (908) 236-7735 • Fax (908) 236-2027
www.essexirb.com

April 3, 2007

Niketas C. Spero
Insect Control & Research, Inc.
1330 Dillon Heights Avenue
Baltimore, MD 21228

Dear Mr. Spero:

On April 2, 2007 the Essex Institutional Review Board met and reviewed the [redacted] clinical research project, "Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field" (G0590307001A044, 2/16/07).

The **Protocol** (dated 3/26/07) reviewed by a full board, was conditionally approved pending the following modifications recommended by the board:

Page 2:

- Under **TABLE OF CONTENTS** – The Table of Contents lists "Appendix I, Data Collection Sheets" on page 26 but page 26 states "Appendix II, Data Collection Sheets". Is there an Appendix I? Please clarify.

Page 9:

- Under section **TEST SITES**, 1st paragraph, line 1 – Please delete the word "in" after the words "will be performed".

Page 10:

- Under 8th paragraph, line 2 – Please replace the words "we are able make" with the words "we are able **to** make".

Page 11:

- 1st paragraph, top of page, line 3 – Please replace the words "test subject" with the words "test subjects". (add an "s" to the word "subject").

Page 16:

- Under section **TEST SUBJECTS**, Eligibility Requirements, Literacy – Please replace the words "and understand English" with the words "and understand English sufficiently enough to follow directions".

Page 17:

- Under 1st paragraph, item #6, line 1 – Please replace the words "by previous" with the words "by previously".
- Under 1st paragraph, item #7, line 1 – Please replace the words "beverages 12 hours" with the words "beverages **for** 12 hours".

Page 18:

- Under section 5th paragraph, line 8 – Please replace the words "presence of a witness" with the words "presence of the person obtaining consent."

Page 26:

- Sheet title **APPENDIX II: DATA COLLECTION SHEET** - This page states "Appendix II, Data Collection Sheets" but the Table of Contents states "Appendix I" for page 26. Is there an Appendix I? Please clarify.

NOTE: When making the revisions to the Protocol, please remember to update the version date before re-submitting.

The **Consent Form** (dated 3/26/07) was conditionally approved pending the following modifications recommended by the board:

Header:

All pages – Please provide a "Version Date" in the header for all pages.

Page 1

- Under section **Address** – Please provide the address of the study sites where the study will take place.
- Under section **Purpose of Study**, line 3 – Please replace the word "mosquitoes." With the words "mosquitoes in Georgia and Florida."
- Under section **Purpose of Study**, line 12 – Please re-write this sentence as follows: "If you decide to participate, sign the ICD in our office, after which you will receive a signed copy."
- Under section **Suitability Checklist for the Study,** item #3, lines 2 & 3 – Please add "hyphens' between the words "over the counter". Also, please replace the words "pregnancy test" with the words "urine pregnancy test".
- Under section **Suitability Checklist for the Study,** item #5 – Please reformat to move this item to the next page so the word "below" is not a stand-alone word on page 2.

Page 2:

- Under item # 7 – Please replace the words "You must be comfortable "with the words "You must **not be bothered".**
- Under item # 12 – Please tell which "study site" the subject will go to.
- 1st paragraph after the numbered items, line 1 – Please add a description of who the "control subjects" are.
- Under section **Procedures, Prior to the test,** item #1, lines 3 to 6 – Please delete the sentence beginning with the words "If you do not want to visit". The consent form should be signed in the presence of study personnel.

Page 2 (continued):

- Under section **Procedures, On the morning prior to the study day**, item #1, lines – After the word "to share lodging." please add the sentence "You will bring the following clothing with you: "and describe the articles of clothing.

Page 3:

- Under section **Study Details**, item #2, line 2 – Please replace the words "you are a control and" with the words "you are a control **subject** and".
- Under section **Study Details**, item #8, line 8 – Please replace the words "parts of their arms" with the words "parts of his/her arms".

Page 4:

- 1st paragraph after the numbered items, line 1 – Please replace the words "your limbs" with the words "your arms".

Page 5:

- 1st paragraph, top of page, line 2 – Please clarify who it is that will "lean over to bite your treated skin".
- Under item #2, 2nd paragraph, line 6 – After the words "permethrin spray." please add the following sentences: "Tuck the pants into your socks. Clothing will be inspected to ensure the least likelihood of a tick getting on your skin."

Page 6:

- Under section **Financial Consideration**, line 8 – Please delete the extra "period" after the word "possible".
- After the section **Alternative** – Please add a "Blank Box" with the words "This space intentionally left blank" in the center of the box." There can only be 1" or less of space between the footer and the last line of the last paragraph of the page.

Page 7:

- Under section **Questions**, line 2 – Please replace the words "research participant, or complaints, you can ask" with the words "research participants, or related concerns, you may contact".
- Under section **Questions**, line 3 – Please replace the words "you can ask" with the word "you can contact".
- Under section **Confidentiality,** line 4 & 5 – Please re-write this sentence as follows: "will be kept confidential; the sponsor, personnel associated with the study, regulatory agency such as the Environmental Protection Agency (EPA), and the Essex Institutional Review Board (EIRB), have a right to review your records."

NOTE: When making the revisions to the Consent, please remember to update the version date before re-submitting.

Essex Institutional Review Board, Inc. acknowledged receipt of the **Material Safety Data Sheet** (dated 7/28/06) on April 2, 2007.

Please remember to send the Indemnification Agreement with the original, wet-ink signature.

Glenn Lambert, MD is authorized to review the protocol and the consent form revisions and grant approval, providing the returned documentation is in order. All meeting votes were unanimous with a five-zero vote. There were no controverted issues and there was no conflict of interest for any of the Board members in attendance. Approvals will be for one year from date of site notification.

Please be reminded that the study may not commence until formal, written approval and a stamped consent form is received by the research site.

We look forward to receiving your revised consent form and responses to the questions raised by the Board. Thank you for the opportunity to work with you on this project.

Sincerely,

Glenn P. Lambert, MS

Glenn Lambert, MD
Chairman

klr

Meeting Minutes

[redacted]

G0590307001A044

On **April 2, 2007** the Essex Institutional Review Board met and reviewed the [redacted] clinical research project, "Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field" (G0590307001A044, 2/16/07).

On **April 2, 2007,** the Board met at 121 Main Street, Lebanon, NJ 08833 at 4:00 p.m. Board members present: Glenn P. Lambert, MD (Chairman) and Deborah A. Timmerman. Alternate Board Members: Louise M. Dougherty, RN (Alternate for Thomas G. McElrath, MD), Jorshinelle T. Sonza, PhD, (Alternate for Philip B. Carr-Jones) and Sandra S. Sullivan, OTR (Alternate for Loretta Szczepanski, RN) and. The following individuals were also present to take minutes: Karen Radcliffe. Glenn P. Lambert, MD chaired the meeting.

The **Protocol** (dated 3/26/07) reviewed by a full board, was conditionally approved pending the following modifications recommended by the board:

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- Under section **Suitability Checklist for the Study,** item #3, lines 2 & 3 – Please add "hyphens' between the words "over the counter". Also, please replace the words "pregnancy test" with the words "urine pregnancy test".
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Page 2 (continued):

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NOTE: When making the revisions to the Consent, please remember to update the version date before re-submitting.

Essex Institutional Review Board, Inc. acknowledged receipt of the **Material Safety Data Sheet** (dated 7/28/06) on April 2, 2007.

Please remember to send the Indemnification Agreement with the original, wet-ink signature.

Please be reminded that the study may not commence until formal, written approval and a stamped consent form is received by the research site.

Glenn P. Lambert, MD, FAAP is authorized to review the protocol and consent form and issue letters of approval, provided the returned documentation is in order specified by the Board. All meeting votes were unanimous with a vote of 5:0. There were no controverted issues and there was no conflict of interest for any of the Board members in attendance. Approvals will be for one year from date of site notification.

Glenn P. Lambert, MD, FAAP
Chairman

4-2-07
4/2/07

Follow-up Submission to Essex IRB by ICR, Inc.

Protocol Amendment

Revised Informed Consent Documents

Site Application Letter Changes as requested by Essex IRB

ICR | *Independent Laboratory*
Pesticide Efficacy Testing
Regulatory Services

Date April 5, 2007

Chairman
Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833-2162

Protocol # G0590307001A044; ICR Project # 0307-059-0155

Dear Dr. Lambert:

Please find enclosed our followup submittal package for your review and approval. The date that we need to send these document out for subsequent submittal to EPA is **April 10, 2007** or sooner, so we respectfully request that we receive your approval by this date. We would like these documents sent to us by **Federal Express Overnight**, so please charge the delivery to our FedEx account number 1028-0348-5.

We also request a copy of the minutes of any followup meeting that the IRB has that pertain to this study, so that we submit them to EPA's HSRB as required by the Common Rule.

We enclose the following documents to support our request:

We are enclosing the following documentation to support this request:
-Protocol Amendments (1 copy)
- Informed Consent Form for Georgia (2 copies)
- Informed Consent Form for Florida (2 copies)

Thank you for your attention, and please do not hesitate to contact me by telephone at 410-747-4500, by fax at 410-747-4928, or email address WGaynor@icrlab.com if you have any questions.

Sincerely,

William J Gaynor

William J Gaynor
Enclosures

1330 Dillon Heights Avenue, Baltimore, MD 21228-1199 | tel 410.747.4500 | fax 410.747.4928 | web www.icrlab.com

ICR, INCORPORATED
1330 Dillon Heights Avenue
Baltimore, MD 21228
Telephone: (410) 747-4500
Fax: (410) 747-4928

Protocol Amendments

Project Number:	0307-059-0155
Protocol Number:	G0590307001A044
Sponsor:	[redacted]
Test Article(s):	TA# 1003715-019 and TA# 1003715-020
GLP Compliance:	40 CFR 160
Amendment #1:	The PROTOCOL VERSION DATE will be changed to April 5, 2007.
Amendment #2:	The informed consent document must be signed by the test subjects in the presence of the Principal Investigator or his representative on the ICR staff.
Amendment #3:	Page 9; Under section **TEST Sites**, 1st paragraph, line 1, the word "in" after the words "will be performed" will be deleted.
Amendment #4:	Page 10; Under the 8th paragraph, line 2, the words 'We are able make" will be replaced with "we are able to make".
Amendment #5:	Page 11; Under the 1st paragraph, top of page, line 3, the words "test subject" will be replaced with "test subjects".
Amendment #6:	Page 16; Under the section **TEST SUBJECTS,** the words "and understand English" will be replaced with "and understand English sufficiently enough to follow directions".
Amendment #7:	Page 17; Under the 1st paragraph, item #6, line 1, the words "by previous" will be replaced with "by previously".
Amendment #8:	Page 17; Under the 1st paragraph, item #7, line 1, the words "beverages 12 hours" will be replaced with "beverages for 12 hours".

Amendment #9:	Page 18; Under the 5th paragraph, line 8, the words "presence of a witness" will be replaced with "presence of the person obtaining consent."
Amendment #10:	Page 26; The words "Appendix II" will be changed to "Appendix I".
Impact On The Study:	Amendments #2 and #9 require that the informed consent be signed by the test subjects in the presence of the Principal Investigator or his representative. The other amendments change wording to clarify the intent of the protocol.

Submitted by: William J Gagnon 4/5/07
Date

Approved by QA: 4/5/07
Date

Acknowledged by:
Sponsor Representative [redacted] 4/4/07
Date

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT FIELD EVALUATION IN GEORGIA

Principal Investigator: Niketas C Spero
Address: The Savannah-Ogeechee Canal Museum & Nature Center 618 Fort Argyle Rd. Savannah, Georgia 31419
Telephone Number: 912-748-8068
24 Hour Emergency Number: 443-865-6032

Purpose of Study

We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes in Georgia. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, sign the ICD in the presence of the person administering the ICD or other ICR study personnel, after which you will receive a signed copy.

Suitability Checklist for the Study

To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English sufficiently enough to follow directions.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over-the-counter urine pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.

Test subject's initials:.....

Date:.....

4. You must not be a full time employee of ICR, Inc.

5. You must be willing to follow the requirements of the study as will be explained to you below.
6. You must have been bitten by at least one mosquito in the past five years.
7. You must not be bothered with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the Georgia study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 of you (test subjects) who will participate in the one-day study. Two of you will be control subjects who will receive no treatment. You will expose one untreated arm to monitor the numbers of mosquitoes in the test area. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD at that time if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and fully discuss it with you via phone. You may subsequently sign the ICD but it must be in the presence of one of our study personnel,
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other

test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging. You will need to bring clothing that will allow you to wear double layers of socks, double layers of long pants, and double layers of long-sleeved shirts to prevent mosquitoes from biting through to your skin.

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you where and when we will meet the following morning to begin the study.
2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control subject and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.

Test subject's initials:.....

Date:.....

7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of his/her arms. When you see a mosquito land on you or your partner, you will notify us.
9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms. The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your arms for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Test subject's initials:.....

Date:.....

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes

   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

   We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which do not have all six of their legs on your treated skin when they attempt to bite, because we do not count the bites of mosquitoes which have one or more legs on the surrounding bandages when they bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

   The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

   Georgia reported 8 cases of WNV, one case of Eastern Equine Encephalitis, and one case of La Crosse Encephalitis in 2006. The La Crosse Encephalitis affects predominantly children under the age of 16. Of the 8 cases of WNV in Georgia, one incidence was reported for Chatham County, the Georgia site of the study.

   We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any

mosquito-borne diseases have been reported in the area. We will minimize your contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray. We will instruct you to tuck your pants into your socks, and we will help you inspect your clothing to ensure the least likelihood of a tick getting on your skin.

3. Reaction to the test repellents

   You may have a reaction to the test repellents.

   The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary. In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration

We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits

While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Test subject's initials:.....

Date:.....

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Questions
If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or related concerns, you may contact the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality
We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; the sponsor, personnel associated with the study, a regulatory agency such as the Environmental Protection Agency (EPA), and the Essex Institutional Review Board (EIRB) have a right to review your records.

Test subject's initials:.....

Date:.....

Consent

I voluntarily agree to participate in this study. I will be given a copy of this signed form. I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

Signature of Subject	Date	Signature of Witness	Date
Printed Name of Subject	Date		
Signature of Principal Investigator	Date		

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT FIELD EVALUATION IN FLORIDA

Principal Investigator: Niketas C Spero
Address: Pine Island, Florida Lee County Mosquito Abatement District

Telephone Number: 941-694-2174 / 941-283-12548
24 Hour Emergency Number: 443-865-6032

Purpose of Study

We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes in Florida. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, sign the ICD in the presence of the person administering the ICD or other ICR study personnel, after which you will receive a signed copy.

Suitability Checklist for the Study

To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English sufficiently enough to follow directions.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over-the-counter urine pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.

Test subject's initials:.....

Date:.....

4. You must not be a full time employee of ICR, Inc.

5. You must be willing to follow the requirements of the study as will be explained to you below.
6. You must have been bitten by at least one mosquito in the past five years.
7. You must not be bothered with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the Florida study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 of you (test subjects) who will participate in the one-day study. Two of you will be control subjects who will receive no treatment. You will expose one untreated arm to monitor the numbers of mosquitoes in the test area. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD at that time if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and fully discuss it with you via phone. You may subsequently sign the ICD but it must be in the presence of one of our study personnel,
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other

test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging. You will need to bring clothing that will allow you to wear double layers of socks, double layers of long pants, and double layers of long-sleeved shirts to prevent mosquitoes from biting through to your skin.

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you where and when we will meet the following morning to begin the study.
2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control subject and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.

Test subject's initials:.....

Date:.....

7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of his/her arms. When you see a mosquito land on you or your partner, you will notify us.
9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms.
    The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your arms for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Test subject's initials:.....

Date:.....

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes

   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

   We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which do not have all six of their legs on your treated skin when they attempt to bite, because we do not count the bites of mosquitoes which have one or more legs on the surrounding bandages when they bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

   The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

   Florida reported 3 cases of WNV, one case of Eastern Equine Encephalitis, and no other arbovirus type cases in 2006. None of these cases occurred in Lee County, Florida, the proposed study site.

   We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any mosquito-borne diseases have been reported in the area. We will minimize your

contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray. We will instruct you to tuck your pants into your socks, and we will help you inspect your clothing to ensure the least likelihood of a tick getting on your skin.

3. Reaction to the test repellents

You may have a reaction to the test repellents.

The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary. In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration

We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits

While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Test subject's initials:.....

Date:.....

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Questions
If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or related concerns, you may contact the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality
We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; the sponsor, personnel associated with the study, a regulatory agency such as the Environmental Protection Agency (EPA), and the Essex Institutional Review Board (EIRB) have a right to review your records.

Test subject's initials:.....

Date:.....

Consent

I voluntarily agree to participate in this study. I will be given a copy of this signed form. I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

Signature of Subject	Date	Signature of Witness	Date
Printed Name of Subject	Date		
Signature of Principal Investigator	Date		

NSpero@icrlab.com

From: "Karen Radcliffe" <kradcliffe@essexirb.com>
To: <WGaynor@icrlab.com>
Cc: <NSpero@icrlab.com>
Sent: Monday, April 09, 2007 10:00 AM
Subject: [redacted]G0590307001A044

Good Morning:

The **Protocol Amendments #1 to 8** (dated 4/5/07) were **approved on April 6, 2007.**

The **Consent Templates** (dated 4/5/07) were **approved on April 6, 2007.**

We also reviewed the **Site Submission** for both the Savannah, Georgia and Pine Island, Florida sites and found the following items that need to be addressed:

Site Application Letter (both sites)

- Page 1, Question 2a – Please list the 24 hour emergency phone number on this form. Also, please clarify the 24 hour phone number on page 1 of the Consent Form – does it go to an answering service? Voice mail? Cell phone?
- Page 3, Question 13a – The question asks "how do you recruit subjects". The answer was "via telephone". Please clarify from where do you recruit the subjects that you phone? – Advertisements? Data base of previous subjects?
- Page 4, Quesiton 16b – Please provide an answer to this question. If there are no other individuals involved in the study, then write "none".

CV's and Licenses:

- Please provide a CV and any applicable license/certificate for Donald Hotstetter.

Please forward these corrections to our office as soon as possible. You may fax over the corrected pages on the SAL's. Be sure to initial and date the revisions before you fax them. If you have any questions, please call.

Thanks.

Karen Radcliffe
908-236-7735 (Office)
908-236-2027 (Fax)
kradcliffe@essexirb.com

SITE APPLICATION LETTER

Date March 26, 2007

Chairman
Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833-2162

In connection with the **[Sponsor]** [redacted] clinical research project, entitled:

[Protocol Title] Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field, Version Date March 26, 2007

and **[Protocol number]** Protocol No. G0590307001A044

application is being made to the Essex Institutional Review Board for review under the provisions of 21 CFR 50, 21 CFR 56, 45 CFR 46, and 40 CRF 26.

The following information will assist the Essex IRB review of your request. All questions must be answered completely.

You must transmit this letter for each site requesting review and approval.

1. ☐ A Form 1572 (if applicable to this study) listing each research site is attached.

   ☑ A Form 1572 is not applicable to this study. A copy of the Investigator Attestation Form is attached.

   ☐ A copy of a valid IND, when one is required. A copy of the Form 1572 or a copy of the Investigator Attestation Form is attached.

   ☐ For device study, attach IDE letter from the FDA or statement supporting non-significant risks or why exempt from IDE requirements under 21 CFR 812.2 or otherwise exempt. A copy of the Investigator Attestation Form is attached.

2a. **Research Site: (Complete a separate letter for each site seeking approval.)**

Name: The Savannah-Ogeechee Canal Museum & Nature Center

Address: 618 Fort Argyle Road
Savannah Georgia 31419

Office Phone: 912-748-8068 Fax: n/a 24 Hour Emergency Number 443-865-6032 (ICR cell #) DES 4-9-07

How many clinical research studies are currently underway at this site? None

SITE APPLICATION LETTER

7. The local IRB has restrictions on independent IRB approval of this study for the listed site. ☐ Yes *[if yes, attach listing of restrictions]* ☑ No

8. Has this protocol been submitted to, reviewed by, disapproved, terminated and/or withdrawn from another IRB? ☐ Yes [if yes, attach IRB findings] ☑ No

9. Is there a local community attitude that could impact on the manner in which your study will be conducted? ☐ Yes [if yes, attach listing of attitudes] ☑ No

10. Please provide the names of the sub-investigators in this study. **If none, please write "NONE".** (This includes any individual member of the clinical trial team designated and supervised by the investigator at a trial site to perform critical trial-related procedures and/or to make important trial –related decisions.) (If necessary, please attach an addendum providing the names of the sub-investigators)

NOTE: These names must be listed on the 1572 form [Box 6], if required by this study type.

Timothy Foard, Donald Hostetter, John Sharpe, and Christy Johnson
(CVs are on file at Essex IRB)

Include resume(s) and current license(s)/certification.

11. Do you personally attend to research participants at this site? ☑ Yes ☐ No

If "No", list the names of those who attend the participants: _____

Include resume(s) and current license(s)/certification.

12. In your absence, research-related medical emergencies are handled by which healthcare giver?

A designated company representative (Timothy Foard)

Include resume(s) and current license(s)/certification.

13. a. How will you identify and recruit potential subjects? _____

ICR contacts potential study subjects from our data base of previous subjects by phone. pcs 4-9-07

b. Will there be any bonus payment for recruiting participants? ☐ Yes ☑ No

If yes, please explain and submit amounts.

14. Will subjects be eligible to participate in any additional studies during this trial?

☐ Yes (Please explain) ☑ No

15. Please provide information about the planned methods for obtaining informed consent.

i. When will the consent process take place? prior to departure to field location

ii. Where will the consent process take place? Either via telephone, or in person at ICR

iii. How will you verify whether the subject understands or has the capacity to comprehend what has been explained the consent process?

Subjects will have time to ask questions, and decline to participate if they choose. The principal investigator will ask if informed consent is understood, and if subjects will sign to verify comprehension & acceptance.

IV. Will you provide the opportunity for the prospective subjects to consider whether or not to participate? ☑ Yes ☐ No (Please explain)

V. For studies of greater than one year duration, will you be reviewing the consent form again with the subject? ☐ Yes ☑ No (Please explain)

N/A Our studies only last parts of one or two weeks.

16. Please list the individuals other than the principal investigator and sub-investigator(s) as requested below. If none, please write "NONE". **Include resume(s) and current license(s)/certification.**

a. Individual(s) who will administer the consent form at this site:

none

b. Individual(s) involved with this study (include responsibility):

N. Spero- Study Coordination, supervise staff, monitor subjects, collect study data; T. Foard, D. Hostetter, J. Sharpe, and C. Johnson all monitor test subjects and collect study data. NCS 4-9-07

17. a. Will a non-English consent form be required for your study population? ☐ Yes ☑ No (skip to Q. 18)

b. If so, what language(s)? _____

Would you like Essex IRB to contract for this service? ☐ Yes ☐ No

If "Yes", consult the Essex IRB Fee Schedule for estimated fees.
If "No", consult the "submission guidelines" for translation certification required.

SITE APPLICATION LETTER

Date March 26, 2007

Chairman
Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, NJ 08833-2162

In connection with the **[Sponsor]** [redacted] clinical research project, entitled:

[Protocol Title] Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field, Version Date March 26, 2007

and **[Protocol number]** Protocol No. G059030700 1A044

application is being made to the Essex Institutional Review Board for review under the provisions of 21 CFR 50, 21 CFR 56, 45 CFR 46, and 40 CRF 26.

The following information will assist the Essex IRB review of your request. All questions must be answered completely.

You must transmit this letter for each site requesting review and approval.

1. ☐ A Form 1572 (if applicable to this study) listing each research site is attached.

   ☑ A Form 1572 is not applicable to this study. A copy of the Investigator Attestation Form is attached.

   ☐ A copy of a valid IND, when one is required. A copy of the Form 1572 or a copy of the Investigator Attestation Form is attached.

   ☐ For device study, attach IDE letter from the FDA or statement supporting non-significant risks or why exempt from IDE requirements under 21 CFR 812.2 or otherwise exempt. A copy of the Investigator Attestation Form is attached.

2a. **Research Site: (Complete a separate letter for each site seeking approval.)**

Name: Pine Island Florida

Address: Lee County Mosquito Abatement District (MAD)
MAD Director Mr. Wayne Gale (239-694-2174)

Office Phone: 239-283-1254 Fax: n/a 24 Hour Emergency Number 443-865-6032 (ICR cell #) DEJ 4-9-07

How many clinical research studies are currently underway at this site? None

SITE APPLICATION LETTER

7. The local IRB has restrictions on independent IRB approval of this study for the listed site. ☐ Yes *[if yes, attach listing of restrictions]* ☑ No

8. Has this protocol been submitted to, reviewed by, disapproved, terminated and/or withdrawn from another IRB? ☐ Yes [if yes, attach IRB findings] ☑ No

9. Is there a local community attitude that could impact on the manner in which your study will be conducted? ☐ Yes [if yes, attach listing of attitudes] ☑ No

10. Please provide the names of the sub-investigators in this study. **If none, please write "NONE".** (This includes any individual member of the clinical trial team designated and supervised by the investigator at a trial site to perform critical trial-related procedures and/or to make important trial –related decisions.) (If necessary, please attach an addendum providing the names of the sub-investigators)

    NOTE: These names must be listed on the 1572 form [Box 6], if required by this study type.

    Include resume(s) and current license(s)/certification.

    Timothy Foard, Donald Hostetter, John Sharpe, and Christy Johnson
    (CVs are on file at Essex IRB)

11. Do you personally attend to research participants at this site? ☑ Yes ☐ No

    If "No", list the names of those who attend the participants: _____

    Include resume(s) and current license(s)/certification.

12. In your absence, research-related medical emergencies are handled by which healthcare giver?

    A designated company representative (Timothy Foard)

    Include resume(s) and current license(s)/certification.

13. a. How will you identify and recruit potential subjects? _____

    ICR contacts potential study subjects from our data base of previous subjects by phone. NCD 2-7-09

    b. Will there be any bonus payment for recruiting participants? ☐ Yes ☑ No

    If yes, please explain and submit amounts:

SITE APPLICATION LETTER

14. Will subjects be eligible to participate in any additional studies during this trial?

☐ Yes (Please explain) ☑ No

15. Please provide information about the planned methods for obtaining informed consent.

I. When will the consent process take place? prior to departure to field location

II. Where will the consent process take place? Either via telephone, or in person at ICR

III. How will you verify whether the subject understands or has the capacity to comprehend what has been explained the consent process?

Subjects will have time to ask questions, and decline to participate if they choose. The principal investigator will ask if informed consent is understood, and if subjects will sign to verify comprehension & acceptance.

IV. Will you provide the opportunity for the prospective subjects to consider whether or not to participate? ☑ Yes ☐ No (Please explain)

V. For studies of greater than one year duration, will you be reviewing the consent form again with the subject? ☐ Yes ☑ No (Please explain)

N/A Our studies only last parts of one or two weeks.

16. Please list the individuals other than the principal investigator and sub-investigator(s) as requested below. If none, please write "NONE". **Include resume(s) and current license(s)/certification.**

a. Individual(s) who will administer the consent form at this site:

none

b. Individual(s) involved with this study (include responsibility):

N. Spero- Study coordination, supervise staff, monitor subjects, collect study data. T. Foard, D. Hostetter, J. Sharpe, and C. Johnson all monitor test subjects and collect study data. JSD 4.9.07

17. a. Will a non-English consent form be required for your study population? ☐ Yes ☑ No (skip to Q. 18)

b. If so, what language(s)? _____

Would you like Essex IRB to contract for this service? ☐ Yes ☐ No

If "Yes", consult the Essex IRB Fee Schedule for estimated fees.
If "No", consult the "submission guidelines" for translation certification required.

IRB Approval Documents and Supplemental IRB Information

eirb

Essex Institutional Review Board, Inc.
121 Main Street • Lebanon, New Jersey 08833
Telephone (908) 236-7735 • Fax (908) 236-2027
www.essexirb.com

April 9, 2007

Niketas C. Spero,
Insect Control & Research, Inc.
1330 Dillon Heights Avenue
Baltimore, MD 21228

Dear Mr. Spero:

The Essex Institutional Review Board, Inc. reviewed the [redacted] clinical research project, "Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field" (G0590307001A044, 3/26/07, Amendments 1 through 8, 4/5/07).

The Protocol (dated 3/26/07) reviewed by a full board, was conditionally approved on April 2, 2007. The Amendments to the Protocol #1 through 8 (dated 4/5/07) were approved on April 6, 2007. Essex Institutional Review Board, Inc. has determined that the proposal meets the IRB requirements for safety and ethical standards. Approval to conduct the study will be re-evaluated annually based on the degree of risk.

The Georgia Version Informed Consent (dated 4/5/07), the Florida Version Informed Consent and Research Sites located at Savannah-Ogeechee Canal & Museum Nature Center, 618 Fort Argyle Rd., Savannah, GA and The Lee County Mosquito Abatement District, Pine Island FL were approved on April 9, 2007. Approvals for these sites expire on April 9, 2008.

Risks to subjects were determined to be reasonable and minimized, based on review of the study design, anticipated results, Investigator's Brochure, reports of any data and safety monitoring (if available) and balancing research versus therapeutic activities and potential benefits to the participants.

Essex requests that you forward a study summary, including adverse reactions, within 90 days of study termination. In any event, reports must be made at intervals not exceeding one year. Any serious or unexpected experiences must be reported to the Board promptly. Enclosed is our brochure detailing your responsibilities associated with this research study.

The Essex Institutional Review Board is in compliance with the federal regulations of the National Institute of Health and Office of Human Research Protection (OHRP) effective August 19, 1991 (45 CFR 46). The Board is also in compliance with the federal regulations of the Food and Drug Administration effective July 27, 1981, and with all amendments thereto, contained in Title 21 of the Code of Federal Regulations, Parts 50 and 56. The OHRP Assurance Number is 1742. A Statement of Compliance and Board Member listing are attached for your files.

Sincerely,

Glenn P. Lambert, MD

Glenn P. Lambert, MD, FAAP
Chairman

EIRB APPROVED
SUBJECT Informed Consent Document
For Georgia Test Location

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT FIELD EVALUATION IN GEORGIA

Principal Investigator: Niketas C Spero
Address: The Savannah-Ogeechee Canal Museum & Nature Center 618 Fort Argyle Rd.
Savannah, Georgia 31419
Telephone Number: 912-748-8068
24 Hour Emergency Number: 443-865-6032

Purpose of Study

We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes in Georgia. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, sign the ICD in the presence of the person administering the ICD or other ICR study personnel, after which you will receive a signed copy.

Suitability Checklist for the Study

To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English sufficiently enough to follow directions.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over-the-counter urine pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.

Test subject's initials:.....

Date:.....

4. You must not be a full time employee of ICR, Inc.

5. You must be willing to follow the requirements of the study as will be explained to you below.
6. You must have been bitten by at least one mosquito in the past five years.
7. You must not be bothered with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the Georgia study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 of you (test subjects) who will participate in the one-day study. Two of you will be control subjects who will receive no treatment. You will expose one untreated arm to monitor the numbers of mosquitoes in the test area. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD at that time if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and fully discuss it with you via phone. You may subsequently sign the ICD but it must be in the presence of one of our study personnel,
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other

test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging. You will need to bring clothing that will allow you to wear double layers of socks, double layers of long pants, and double layers of long-sleeved shirts to prevent mosquitoes from biting through to your skin.

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you where and when we will meet the following morning to begin the study.
2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control subject and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.

Test subject's initials:.....

Date:.....

7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of his/her arms. When you see a mosquito land on you or your partner, you will notify us.
9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms.
    The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your arms for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Test subject's initials:.....

Date:.....

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes

   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

   We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which do not have all six of their legs on your treated skin when they attempt to bite, because we do not count the bites of mosquitoes which have one or more legs on the surrounding bandages when they bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

   The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

   Georgia reported 8 cases of WNV, one case of Eastern Equine Encephalitis, and one case of La Crosse Encephalitis in 2006. The La Crosse Encephalitis affects predominantly children under the age of 16. Of the 8 cases of WNV in Georgia, one incidence was reported for Chatham County, the Georgia site of the study.

   We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any

mosquito-borne diseases have been reported in the area. We will minimize your contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray. We will instruct you to tuck your pants into your socks, and we will help you inspect your clothing to ensure the least likelihood of a tick getting on your skin.

3. Reaction to the test repellents

You may have a reaction to the test repellents.

The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary. In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration

We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits

While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Test subject's initials:.....

Date:.....

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Questions
If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or related concerns, you may contact the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality
We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; the sponsor, personnel associated with the study, a regulatory agency such as the Environmental Protection Agency (EPA), and the Essex Institutional Review Board (EIRB) have a right to review your records.

Consent
I voluntarily agree to participate in this study. I will be given a copy of this signed form. I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

Signature of Subject	Date	Signature of Witness	Date

Printed Name of Subject Date

Signature of Principal Investigator Date

EIRB APPROVED
SUBJECT Informed Consent Document
For Florida Test Location

PROTOCOL: EVALUATION OF THE EFFICACY OF PERSONAL REPELLENTS AGAINST MOSQUITOES IN THE FIELD

INFORMED CONSENT AUTHORIZATION TO PARTICIPATE IN AN ICR, INC. MOSQUITO REPELLENT FIELD EVALUATION IN FLORIDA

Principal Investigator: Niketas C Spero
Address: Pine Island, Florida Lee County Mosquito Abatement District

Telephone Number: 941-694-2174 / 941-283-12548
24 Hour Emergency Number: 443-865-6032

Purpose of Study
We (ICR, Inc.) have been contracted by an outside company ("Sponsor") to conduct a research study on two mosquito repellent products, to find out how well these products work outdoors against wild mosquitoes in Florida. We are asking you to participate in this study. Your participation would be strictly voluntary. We have prepared this Informed Consent Document (ICD) to explain this study to you. We will go over the ICD with you to ensure that you fully understand what would be expected of you if you participate, and explain any risks you may face through your participation. We will also use the following suitability checklist to determine if you qualify to participate in the study. Please ask us about anything you do not understand before deciding whether to participate in this study. Your signing of the ICD indicates your willingness to participate in this study, but if you are selected to participate, you would still be able to withdraw from the study at any time. If you have come into our office to review the ICD, you may take the ICD home with you if you need more time to think about whether to participate. If you decide to participate, sign the ICD in the presence of the person administering the ICD or other ICR study personnel, after which you will receive a signed copy.

Suitability Checklist for the Study
To be suitable to participate in this study you must meet the following conditions:

1. You must be between 18 and 65 years of age and consider yourself to be in good health.
2. You must be able to read, speak and understand English sufficiently enough to follow directions.
3. You must not be pregnant or breastfeeding. Women will be required to perform an over-the-counter urine pregnancy test on the morning of the study. We will provide the test kit. A female ICR staff member will verify the results. We will keep the results of the pregnancy test confidential from everyone except you.

Test subject's initials:.....

Date:.....

4. You must not be a full time employee of ICR, Inc.

5. You must be willing to follow the requirements of the study as will be explained to you below.
6. You must have been bitten by at least one mosquito in the past five years.
7. You must not be bothered with your reaction to that mosquito bite(s).
8. You must have no known sensitivity to insect repellents or skin care products.
9. You must not smoke or drink alcoholic beverages within 12 hours prior to the study.
10. You must not use perfumed cosmetics, skin creams, shaving lotions, etc. after midnight the day of the study until after that day's testing is completed.
11. You must be willing to wear proper protective clothing, as explained below, during the study.
12. You must be willing to either fly or provide your own transportation to the Florida study site. In both cases we would pay your travel expenses.
13. You must be willing to use the lodging accommodations we provide (at our expense) or find your own accommodations (at your own expense).
14. You must be available to participate in the study for its maximum duration of six days.

There will be a total of 14 of you (test subjects) who will participate in the one-day study. Two of you will be control subjects who will receive no treatment. You will expose one untreated arm to monitor the numbers of mosquitoes in the test area. The study itself will take one day, but we will allocate a total of six days for the trip to allow for travel time, foul weather and study-related time. If you are chosen to participate in this study, you will be paid for a total of six days as discussed below.

Procedures

Study Schedule Overview

Prior to the test:

1. We will discuss with you every line of the ICD. If you visit our Baltimore office, you may voluntarily sign the ICD at that time if you wish to be considered for participation in the study. If you do not want to visit our Baltimore office, we will mail the ICD to you, and fully discuss it with you via phone. You may subsequently sign the ICD but it must be in the presence of one of our study personnel,
2. We will notify you within one week whether we have selected you for participation.

If selected to participate in this study:

On the morning prior to the study day:

1. You will go to the designated airport to fly to the study site with our staff and other

test subjects. You will be assigned a hotel room when you reach your destination. You may be required to share lodging. You will need to bring clothing that will allow you to wear double layers of socks, double layers of long pants, and double layers of long-sleeved shirts to prevent mosquitoes from biting through to your skin.

On the evening prior to the study day:

1. We will review with you the specifics of the study as described in the ICD, pre-measure your arms to determine where your treatment area will be, and tell you where and when we will meet the following morning to begin the study.
2. We will treat the outside of your shoes with a 0.5% permethrin aerosol (an insecticide) to prevent ticks present in the study area from crawling on you during the study.

On the morning of the study day:

1. You will have breakfast at our expense, wash your arms with unscented Neutrogena® soap, and go to the designated meeting place.
2. We will measure and treat a 3 - 5 inch wide test area around both of your forearms as described below and then travel to the study site.

Study Details

1. We will select two of you as control subjects, and the other 12 of you as treated test subjects.
2. We will use a felt tip pen to mark a 3 - 5 inch wide band around one of your forearms if you are a control subject and two forearms if you will be treated.
   We will determine the exact location of this band by measuring the distance around two locations of your forearm, i.e. a location near the wrist and another just below the elbow of the forearm.
3. We will protect the skin above and below this band from mosquito bites by using multiple layers of elastic bandages and or Velcro© straps held in place with adhesive tape.
4. If we have selected you as a treated test subject, we will cover the band on your forearms with less than 1/10 of a teaspoonful of repellent using a syringe without the needle. This amount of repellent product is similar to that which would normally be applied by consumers.
5. We will then put on a latex or vinyl glove, and using a finger tip, spread the repellent evenly over the band.
   Once we treat your arms, you must not rub them against anything, as this could rub off some of the test repellent and change the results.
6. We will mark your bandages with a letter identifying the repellent on that arm.
   We will not identify the repellents to you.

Test subject's initials:.....

Date:.....

7. If we have selected you as a control test subject, you will receive no treatment.
8. You will all then put on your head net and gloves, pick up your collapsible chair, and we will lead you into the study area to begin the first five-minute exposure period of the day's study.
   Treated subjects: we will pair you with another treated test subject and tell you where you should sit. You will sit near your partner. You may move about by slowly walking in the area, but must remain within approximately one to three meters of your partner. You will assist your partner in alerting him/her to mosquito landings on hard to see parts of his/her arms. When you see a mosquito land on you or your partner, you will notify us.
9. Control subjects: we will count the number of mosquitoes which land on your untreated arm during one-minute intervals for up to five minutes. When you reach the required landing rate (1 - 10 landings per minute),we will stop counting. You will leave the study site until the next five-minute exposure period begins.
   We will try to brush the mosquitoes away before they can probe or bite you.
10. Treated subjects: we will count the number of mosquitoes (up to two) which bite the treated skin on either of your two arms during the five-minute exposure periods which occur every 30 minutes.
    Mosquitoes must rest entirely on your treated skin (not on your bandage) or we will not count them; we will just brush them away. When you receive two bites on the same arm in the same exposure period, or one bite in each of two consecutive exposure periods, you will cover that arm with your sleeve. This is called "breakdown". You will no longer expose that arm for the rest of the day's study. You will then be able to remove the bandages and tape, and scratch that arm. If you wish, you may use Caladryl®, Calamine® lotion or rubbing alcohol to help stop the itching from the bites you received. When you reach breakdown on both arms, you will have finished your part in the study and will not have to return to the study site.
11. At the end of the five-minute exposure period we will lead all of you out of the study site to an area where mosquitoes are not prevalent, possibly a screened enclosure.
12. The day's study will consist of five-minute exposure periods every half hour for up to 12 hours or until all treated test subjects have reached breakdown on both arms.
    The test may also be ended by rainy weather or low numbers of mosquitoes.

The study duration could be 14 hours or more: preparing your arms for the test, along with preparing the other test subjects, will take about one hour; transport to and from the study site could take up to one hour; exposures to mosquitoes will go on for up to 12 hours.

Discomfort and Hazard

Your may be exposed to three types of study-related hazards by participating in this study:

1. Mosquito bites or probes

   A bite occurs when a mosquito pierces your skin and takes blood. A probe is the same except it doesn't take blood. The irritation from a mosquito bite or probe may cause itching, redness or swelling that will usually disappear within a couple of days, or in severe cases may cause the development of large bumps on your skin, difficulty breathing, sweating and/or a rapid pulse.

   We will minimize your risk of receiving bites or probes by providing you with a head net and latex or vinyl gloves. We will instruct you on the use of two layers of clothing so mosquitoes cannot bite you through your clothes. We will promptly remove mosquitoes which do not have all six of their legs on your treated skin when they attempt to bite, because we do not count the bites of mosquitoes which have one or more legs on the surrounding bandages when they bite your treated skin. We will only expose you to mosquitoes for five minutes every half hour. We will also minimize the irritation from bites or probes you receive by making Caladryl® or Calamine® lotion or rubbing alcohol available at the study site for your use after the study is completed.

2. Diseases transmitted by mosquitoes or other biting organisms

   The disease risks you will be exposed to are primarily from the bites of mosquitoes. Fortunately, most of these diseases do not occur naturally in the United States, but diseases like malaria and dengue are occasionally introduced by travelers. Mosquitoes are also known to carry various types of encephalitis viruses such as West Nile Virus (WNV). The percentage of mosquitoes carrying WNV is small and most people who have developed serious symptoms have been the elderly or those with compromised immune systems. The most common symptoms of WNV are mild illness with fever, headache, and body aches. The principal carriers of the WNV are not common at the test site. You may also be exposed to deer ticks which can carry Lyme's Disease.

   Florida reported 3 cases of WNV, one case of Eastern Equine Encephalitis, and no other arbovirus type cases in 2006. None of these cases occurred in Lee County, Florida, the proposed study site.

   We will minimize your risk of contracting the mosquito-borne diseases by minimizing the number of mosquito bites you receive as mentioned above and contacting the local Mosquito Abatement District to verify that no recent cases of any mosquito-borne diseases have been reported in the area. We will minimize your

contact with ticks by spraying the outside of your shoes the night prior to the test with a 0.5% permethrin spray. We will instruct you to tuck your pants into your socks, and we will help you inspect your clothing to ensure the least likelihood of a tick getting on your skin.

3. Reaction to the test repellents

You may have a reaction to the test repellents.

The Sponsor has minimized this possibility by choosing an active ingredient (picaridin) which has demonstrated low acute oral, skin, and inhalation toxicity. The Environmental Protection Agency (EPA) has classified it as Toxicity Category IV, low toxicity for acute inhalation toxicity and primary skin irritation. The Sponsor has selected the inert ingredients in the formulation because these inerts are widely used in cosmetic formulations, are not sensitizers, and experience has shown that their use is both beneficial for skin care and safe for direct human exposure.

Should you have any medical problems, we will have First Aid qualified staff members, as well as First Aid supplies, present on site. We will have cell phones to make emergency calls if necessary. In the case of medical emergency, we will transport you to a selected local hospital at our expense. We will pay all of your medical bills for study-related illnesses and injuries.

Financial Consideration

We will pay you $99/day ($11/hour) for every day you are away from home. In addition, we will pay you $16.50/hour on the study day for every hour beyond 9 hours that the study continues. The payment for a 12-hour test day will be $148.50 for 12 hours plus $16.50 for any additional hours beyond 12. You will receive this payment by mail at the conclusion of the study. If we ask you to drop out of the test, and you have complied with all of our requests, we will still give you full payment. If we ask you to drop out of the test because you have not followed all of our directions, or if you choose to drop out of the test, we will compensate you for time up to that point at the stated hourly rate. We will attempt to transport you back to your home as soon as reasonably possible. If we cannot accomplish this, you will stay at our place of lodging until the end of the study. We will pay for your travel, lodging, and breakfast, lunch, and dinner costs.

Benefits

While you will probably get no personal benefit from this study, the results of the study may help bring a new repellent to the market and thus provide consumers with a greater choice of repellents.

Your Rights
We will give you an opportunity to discuss with us any aspects of this ICD that are not clear to you so that you can fully understand the nature of the study, its purpose, and the procedures to be used, together with the discomforts, risks or other adverse effects you may experience during or after the study. Your participation is voluntary. You may refuse to take part in this study or quit at any time without penalty or loss of benefits to which you may be otherwise entitled. If after reading this ICD you sign it to signify your agreement, we will give you a copy for your files.

Alternative
Your only alternative to participating is to not do so. If you are already at the test site when you decide to drop out of the study, we will attempt to transport you back to your home. If we cannot accomplish this, you will stay at our place of lodging until the end of the study.

Questions
If you have any questions about this study or suffer a reaction potentially associated with the study, call us at 410-747-4500. If you have any questions about your rights as a research participant, or related concerns, you may contact the Essex Institutional Review Board (IRB), 121 Main Street, Lebanon, NJ 08833, and its telephone is 908-236-7735. Essex IRB is a committee that has reviewed this research project to help ensure that the rights and welfare of the participants are protected and that the study is carried out in an ethical manner. Review of this study by Essex IRB is not an endorsement of the study or its outcome.

Confidentiality
We and our sponsor may use the information obtained from your taking part in this test, and this information may become part of a report. We will keep this report as confidential as possible under local, state and federal law. We will reference only your first name and the first initial of your last name in the report. However, we cannot guarantee that your identity will be kept confidential; the sponsor, personnel associated with the study, a regulatory agency such as the Environmental Protection Agency (EPA), and the Essex Institutional Review Board (EIRB) have a right to review your records.

Consent
I voluntarily agree to participate in this study. I will be given a copy of this signed form. I am 18 to 65 years of age. By signing this form I have not given up my legal rights.

Signature of Subject	Date	Signature of Witness	Date
Printed Name of Subject	Date		
Signature of Principal Investigator	Date		

eirb

Essex Institutional Review Board, Inc.
121 Main Street • Lebanon, New Jersey 08833
Telephone (908) 236-7735 • Fax (908) 236-2027
www.essexirb.com

MEMBERS

Phillip B. Carr-Jones, M Div
Episcopal Priest

Loretta P. Szczepanski, RN
EIRB Vice-Chairperson
Registered Nurse

Glenn P. Lambert, MD, FAAP
EIRB Chairman
Pediatrician

Tom Ollis, R Ph
EIRB Vice-Chairman
Pharmacist

Sharyn J. Van Glahn
Teacher's Aide

Deborah A. Timmerman
Office Administrator

Thomas G. McElrath, MD
Obstetrician/Gynecologist

ALTERNATE MEMBERS

John Castro
Engineer/Airline Pilot

Sandra S. Sullivan, OTR
Occupational Therapist

Louise M. Dougherty, RN
Registered Nurse

Jorshinelle T. Souza, PhD
Playwright/Writer

Vassie C. Ware, PhD
Molecular Biologist

Harry M. Weske, MD
Cardiologist

William C. Waggoner, PhD
FAACT (Ex Officio)
Medical Ethicist

James L. Harris
Chemist/Business Manager

Nancy Maulding
Mathematician

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Ellen Quinn
Associate Director, Administration
Insect Control & Research, Inc.
1330 Dillon Heights Avenue
Baltimore, MD 21228

Re: Essex IRB Members

Dear Ellen:

Per your request for the profiles of the members of the Essex IRB, I enclose the following information:

Members:

Glenn P. Lambert, MD, FAAP: BS; Chairman; Board-Certified in Pediatrics, 29 years of IRB experience, full-time employee for 7 years

Loretta P. Szczepanski, RN; Vice-Chairperson; BSN, MA/Administration, CNA, Registered Nurse; retired Director of Patient Care Services Hunterdon Medical Center; 5 years on Board

Philip B. Carr-Jones, BA, M Div; Episcopal Priest; 14 years on Board

Deborah A. Timmerman: HS degree; homemaker, bookkeeper/secretary/office manager; 13 years on Board

Tom Ollis, R Ph; BS, MA of Administrative Science; hospital pharmacist; 5 years on Board

Thomas G. McElrath, MD, FACOG; Ob/Gyn specialist; 3 years on Board

Nancy Maulding, BS, MAT; Professor of Mathematics; 2 years on Board

Alternate Members:

Louise M. Dougherty, RN, BSN, MS in Education; Public Health Nurse; 5 years on Board

~~John Castro, BS Engineering; Airline Pilot; 2 years on Board~~

Sandra S. Sullivan, OTR, BS; Occupational Therapist; 2 years on Baord

Jorshinelle T. Sonza, PhD; Playwright and author; BA, MA, PhD in English and Comparative Literature; 4 years on Board

Vassie C. Ware, PhD, BA, MPhil; Professor of Molecular Biology, Lehigh University; 6 years on Board

Harry M. Woske, MD; FACC, FACP; AB; Cardiologist; 5 years on Board

James L. Harris, BS, MBA; Chemist/Business Manager; 1 year on Board

William C. Waggoner, PhD, FAACT, AB, MS; Toxicologist, medical ethicist, CEO/President of Essex IRB; Board chairman from 1981 to 1999; on Board as an ex officio member for 3 years

Other than the Chairman and Dr. Waggoner, no Board member is an employee of Essex IRB. Dr. Waggoner is the principal stockholder/ owner of Essex IRB and does not participate in the review and approval of any studies. One member has an equity holding in one pharmaceutical company that requires her to be recused from any deliberations concerning trials submitted by that sponsor.

Essex IRB has established and follows written procedures for conducting its initial and continuing review of research and for reporting its findings, recommendations and actions to the investigator and the institution.

If there is any additional information you need, please let me know.

Thank you for using Essex IRB for your studies.

Sincerely,

Glenn P. Lambert, MD

Glenn P. Lambert, MD, FAAP
Chairman

Indemnification Agreement
Between
[redacted]
and
ESSEX INSTITUTIONAL REVIEW BOARD, INC.

[redacted] agrees to hold harmless **Essex Institutional Review Board, Inc. ("EIRB")** from any claims of injury or illness resulting from the development, evaluation and implementation of Protocol No. G0590307001A044 , entitled Evaluation of the Efficacy of Personal Repellents Against Mosquitoes in the Field only under the following circumstances:

If any undesirable side effect or reaction occurs following the administration of the test product(s), and if EIRB has employed reasonable care in the evaluation of the protocol, and has not violated any local, state or federal laws pertaining to the administration of chemical substances, medical devices, drugs or biological agents, including but not limited to the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, and the Federal Food, Drug and Cosmetic Act of 1938, as amended, and the regulations promulgated pursuant thereto, [redacted] shall indemnify and hold harmless EIRB against any and all claims, lawsuits and judgements thereon (including reasonable attorney's fees through the appellate level) which may be brought against it as a result of the evaluation or implementation of the protocol.

In the event any such claim is made or lawsuit is initiated, EIRB shall give prompt written notice thereof to [redacted], shall permit [redacted] or its insurance carrier to defend such claim or lawsuit, and shall cooperate fully in any such defense.

Essex Institutional Review Board
Accepted By:

Name: [redacted]

Title: CEO

Date: 03/27/07

[redacted]
Accepted By:

Name: [redacted]

Title: Director, Toxicology

Date: 3/27/07

RECEIVED
MAR 29 2007

Protocol #: G0590307001A044
Sponsor: [redacted]

STATEMENT OF COMPLIANCE
(USA)

Name of IRB: **The Essex Institutional Review Board**
Address: **121 Main Street**
Lebanon, NJ 08833

The Essex Institutional Review Board is duly constituted (fulfilling FDA and OHRP requirements for diversity), allows only those IRB/IEC members who are independent of the investigator and sponsor of the trial to vote/provide opinion on the trial, has written procedures for initial and continuing review of clinical trials, prepares written minutes of convened meetings, and retains records pertaining to the review and approval process; all in compliance with the requirements defined in 21 CFR (Code of Federal Regulations) parts 50, 56 and 312, 45 CFR 46 and the International Conference on Harmonisation (ICH) guidance relating to Good Clinical Practice (GCP).

Signature of IRB Chairperson or Designee

April 9, 2007
Date of Signature

Glenn P. Lambert, MD, FAAP, Chairman
Printed Name

The template consent form version date should be maintained if the changes are only site-variable (investigator or study coordinator's name, site address, telephone number, or financial incentive), or to correct a typographical error, but a site revision date may be added to differentiate the revised consent form from the previous document.

SITE APPLICATION LETTERS

During the course of approved research, additional **Site Application Letters** requesting review and approval of a research site will need to be completed by a Principal Investigator under the following circumstances: change of Principal Investigator at a site; site address change; or additional research site(s) being utilized by a Principal Investigator. A template "fill-in-the-blanks" form is available from the EIRB website to simplify this request process. To ensure IRB approval for the conditions listed above, the Site Application Letter should be submitted for review prior to the implementation of the changes.

If at any time you have a question or concern regarding your IRB approval, or are unsure of what material to submit, please call our offices at the number listed on the front of this brochure or visit our website at essexirb.com. Our staff will gladly assist you in meeting your IRB needs to conduct clinical research projects.

eirb

INVESTIGATOR REPORTING OBLIGATIONS TO THE INSTITUTIONAL REVIEW BOARD

eirb

Essex Institutional Review Board, Inc.
121 Main Street
Lebanon, New Jersey 08833-2162

Telephone (908) 236-7735
Fax (908) 236-2027

www.essexirb.com

Your site has received approval from the Essex Institutional Review Board (EIRB) to conduct clinical research on human subjects. This approval was given after an intensive and thorough review of the research plan, finalized consent form and supporting documentation. As an approved site, you have future reporting obligations to the EIRB. **Please read the information below carefully.**

ADVERSE EVENTS

Unexpected adverse reactions from a study subject must be reported in writing to the EIRB and sponsor by the investigator or his/her designee within ten working days. If the reaction is serious (fatal, life-threatening, permanently disabling or requires hospitalization) and may be reasonably caused by the test article, it must be reported immediately in writing to the EIRB and the sponsor. Additional written follow-up reports may be necessary until the adverse event is resolved.

REQUIRED REPORTS

Approval for a site is granted, in most cases, for one year from the date of the approval. The expiration date for your approval is included in your approval letter and stamped on the first page of your approved consent form. Any data generated using research subjects after that date will be invalid. If you plan to continue the project, an **Extension Report** must be filed within the 30 days prior to your site expiration date.

If your research has ended, a **Final Report** must be filed within 90 days of the study completion date. A **Request to Increase Number of Patients Report** must be filed prior to increasing enrollment of participants at any point in the study.

These reports must include the following information: number of subjects enrolled (signed the consent form), number of subjects discontinued (and the reasons why), number of subjects still participating, the completion date of the research (Final Report only) and an outline of any adverse events encountered. The report must be signed by the Principal Investigator or his/her designee. To simplify the reporting process, you may obtain a standardized form from the EIRB that can be utilized for any of the above reports.

REVISIONS

Revisions to the protocol or consent form must be reviewed and approved by the EIRB prior to implementation.

Protocol Revisions - changes to the protocol can be submitted either as an amendment or revised protocol. For ease of review, an outline of the specific areas of the protocol that were changed should accompany the amendment or revised protocol.

Consent Form Revisions - when submitting revisions to a previously approved consent form, an investigator or designee needs to submit three copies of the revised consent form for approval along with an outline of the specific changes made. If changes are made to the approved template text, the revision date of the consent form must be updated.