



**US Environmental Protection Agency
Office of Pesticide Programs**

Petition for Cyprodanil

February 1, 2008



FEDERAL EXPRESS

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Document Processing Desk (**Exclusive Use Extension Request**)
Office of Pesticide Programs (**7505P**)
U. S. Environmental Protection Agency
One Potomac Yard - Room S-4900
2777 South Crystal Drive
Arlington, VA 22202

Attention: Ms. Cynthia Giles-Parker – Branch Chief, Fungicide Branch
Ms. Mary Waller, Team 21 Lead, Fungicide Branch

SUBJECT: EXCLUSIVE USE EXTENSION REQUEST – CYPRODINIL (Cyprodinil Technical - EPA Reg. No. 100-811, Vanguard WG – EPA Reg. No. 100-828, Switch 62.5 WG – EPA Reg. No. 100-953)

Dear Ms. Giles-Parker:

Syngenta Crop Protection, Inc., submits this application under the authority of FIFRA section 3(c)(1)(F)(ii) and requests EPA grant Syngenta Crop Protection, Inc., a 3-year extension of exclusive use for the cyprodinil data specified within the application. The current cyprodinil exclusive use period expires April 10, 2008. When EPA grants the requested extension, the new exclusive use period will extend through April 10, 2011.

FIFRA section 3(c)(1)(F)(ii) provides for up to a 3-year extension of the exclusive use period for an active ingredient if certain *qualifying criteria* are met and a sufficient number of registrations for minor use crops are obtained within certain timeframes.

For minor use crops to be eligible they must first be registered after August 3, 1996. Cyprodinil was first registered on April 10, 1998, as a technical (EPA Reg. No. 100-811) and an end-use product, Vanguard WG Fungicide, EPA Reg. No. 100-828. Thus, it satisfies the criteria for being first registered after August 3, 1996.

Also, the uses must be approved within a 7-year period following the initial registration and must be marketed for the minor use crop. Vanguard WG Fungicide and another end-use product containing cyprodinil, Switch 62.5WG Fungicide, have subsequently been registered for and been marketed for use on many minor crops/uses. Syngenta provides specific justification within this application for 9 minor uses that were approved during the 7-year period following initial registration and meet the required criteria. FIFRA section 3(c)(1)(F)(ii) stipulates that a 1-year extension of the exclusive use period will be granted for each 3 minor uses approved up to a total of 3 additional years for all minor uses approved. Thus, cyprodinil fully meets the statutory minimum number of required minor use registrations and, therefore, qualifies for a 3-year exclusive use extension.



Ms. Giles-Parker, Ms. Waller
February 1, 2008
Page 2 of 2

Additionally, the statute requires applicants to provide information that allows the Administrator, in consultation with the Secretary of Agriculture to determine that the active ingredient for which the extension is being pursued satisfies at least one of four "qualifying criteria." Syngenta provides evidence within the attached application to document cyprodinil meets the required criteria for at least 9 minor uses and to support extending the exclusive use period for cyprodinil data for three years. Cyprodinil is registered on over 70 minor crops and the 9 supporting minor uses were selected as supporting examples for consideration by EPA. Please note that Syngenta has provided a list of the cyprodinil data eligible for exclusive use extension within the application. Once approval is granted, we request the Agency amend its public records to specifically identify the new exclusive use expiration date of April 10, 2011, for these data.

Syngenta requests that the Agency proceed with the review and evaluation of our application and the granting of the requested extension prior to April 10, 2008. Please feel free to contact me at (336) 632-2993, if I can be of assistance or answer any questions in association with this request.

Best regards,

A handwritten signature in black ink, appearing to read "Greg Watson".

Greg Watson, Ph.D.
NAFTA Fungicide and Insecticide Team Lead
Syngenta Regulatory Affairs
Syngenta Crop Protection, Inc.

cc: Ms. Lois Rossi, Director, Registration Division, EPA
Dr. Janis McFarland, Director, Regulatory Affairs, Syngenta Crop Protection

Enclosures

**APPLICATION FOR EXTENSION OF
EXCLUSIVE USE PERIOD FOR CYPRODINIL
DATA SUPPORTING THE REGISTRATION OF
Cyprodinil Technical, EPA
Registration Number 100-811,
Vangard® WG, EPA Registration
Number 100-828 AND Switch®
62.5WG, EPA Registration Number
100-953**

**Supporting Minor Use Crops: Basil,
Blueberries, Broccoli, Cabbage,
Chives, Lychee, Mustard Greens,
Pistachio and Raspberry**

Table of Contents

I. INTRODUCTION	3
II. SUMMARY AND CONCLUSIONS OF APPLICATION	4
III. STATUTORY FOUNDATION.....	4
IV. CYPRODINIL QUALIFIES FOR EXCLUSIVE USE EXTENSION	5
▪ Cyprodinil and the Nine (9) Identified Minor Uses Were Registered After August 3, 1996	5
▪ All Nine (9) Minor Uses Were Approved Within Seven Years of First Cyprodinil Registration.....	5
• Syngenta Markets Cyprodinil for Use on the Claimed Minor Uses.....	6
Each of the Nine (9) Identified Minor Uses Qualifies Under FIFRA section 2(II) as a Minor Use.....	6
Each of the Nine (9) Minor Uses Was Registered Within the 7-Year Window and Applicable Residue Data Were Generated to Support the Minor Use.....	7
V. Procedure Used to Identify, Evaluate and Group Alternative Active Ingredients – for purposes of comparisons under exclusive use qualifying criterion 1 (biological efficacy)	8
VI. Biological Profile for Cyprodinil.....	12
Cyprodinil Resistance Management (Important for Exclusive Use Extension Qualifying Criterion 3 – Plays a significant role in managing pest resistance.....	12
VII. DISCUSSION OF MINOR USES AND BIOLOGICAL EFFICACY OF CYPRODINIL (EXCLUSIVE USE EXTENSION QUALIFYING CRITERION 1: INSUFFICIENT EFFICACIOUS ALTERNATIVES)	13
Basil.....	13
Blueberry	14
Broccoli	16
Cabbage	16
Chives.....	17
Mustard Greens	18
Lychee	19
Pistachio.....	20
Raspberry	22
Cyprodinil Resistance Management (Important for Exclusive Use Extension Qualifying Criterion 3 – Plays a significant role in managing pest resistance.....	23
VIII. REQUEST THREE YEAR EXTENSION OF CYPRODINIL DATA EXCLUSIVE USE PERIOD.....	24
IX. Request for Meeting	25

**APPLICATION FOR EXTENSION OF EXCLUSIVE USE PERIOD FOR CYPRODINIL DATA
SUPPORTING THE REGISTRATION OF Cyprodinil Technical, EPA Registration Number
100-811, Vanguard® WG, EPA Registration Number 100-828 AND Switch® 62.5WG,
EPA Registration Number 100-953.**

**Supporting Minor Use Crops: Basil, Blueberries, Broccoli, Cabbage, Chives,
Lychee, Mustard Greens, Pistachio and Raspberry**

I. INTRODUCTION

Syngenta Crop Protection, Inc. submits this application under the authority of FIFRA § 3(c)(1)(F)(ii) and requests EPA grant an extension of the exclusive use period for cyprodinil data for a period of 3 years. Under FIFRA § 3 (c)(1)(F)(i), a period of 10 years of exclusive use for cyprodinil data is presently granted to Syngenta Crop Protection, Inc., the original submitter of data supporting the initial registration of this active ingredient. Since cyprodinil was first registered by EPA on April 10, 1998, the 10-year period of exclusive use for cyprodinil data expires effective April 10, 2008. With this extension, the new exclusive use period will extend through April 10, 2011.

This application provides documentation to show that cyprodinil minor use crops satisfy the provisions of FIFRA § 3 (c)(1)(F)(ii) and thereby support an extension of the cyprodinil exclusive use period. FIFRA permits an extension of the exclusive use period to be granted for data submitted in support of an active ingredient if minor uses are first approved after August 3, 1996 and within a 7-year period following initial registration. The two criteria addressed for cyprodinil in this document that support the exclusive use extension are: Exclusive Use Extension Qualifying Criterion 1 and 3:

- there are insufficient efficacious alternative registered pesticides available for the use and
- Plays a significant role in managing pest resistance

Based upon favorable characteristics of being a low application rate pesticide and improved safety profile when compare with competitive fungicides, the EPA classified cyprodinil as a Reduced Risk pesticide in relation to an application for registration for use on stone fruit (Appendix I – EPA publication titled Reduced Risk/Organophosphate Alternative Decisions for Conventional Pesticides last updated August 10, 2007) and accelerated the data evaluation and product approval of this new fungicide active ingredient. Cyprodinil provides excellent activity at low rates against economically important diseases in many crops and is effective on many diseases that have developed resistance to other classes of fungicides. Thus, it is used in resistance management programs as an alternating product with a different mode of action, compared to those classes of chemistry that developed a predominant resistance phenotype in the plant pathogen population. The importance of cyprodinil is also evidenced by the variety of minor use crops that have been approved following initial registration. Cyprodinil was first registered by EPA on April 10, 1998 and cooperative organizations such as IR-4 have taken an active role in assisting in the development of this important pesticide for use on many minor crops (current versions of EPA approved labeling for cyprodinil containing end-use products are included in Appendix II).

FIFRA stipulates that at least 3 minor use crops must be approved to qualify for a 1 year exclusive use extension of the data up to a maximum of 3 additional years of exclusivity. Syngenta provides supporting documentation in this application for approved minor use crops that support this extension. Thus, cyprodinil has met the statutory requirements and is a candidate for a 3-year extension of exclusive use of data. This application provides documentation that will allow the Administrator, in consultation with the Secretary of Agriculture, to determine that the use of cyprodinil on each of the 9 identified minor use crops satisfies at least one of four stated qualifying criteria. Therefore, an extension of the exclusive use period for 3 years to April 10, 2011 is appropriate as provided by FIFRA.

II. SUMMARY AND CONCLUSIONS OF APPLICATION

Cyprodinil is registered for use on many groups of crops which permits use on a substantial number (over 70) of minor crops. As evidenced by 40 CFR 180.532 (Appendix III), cyprodinil has been extensively researched and has a substantial number of tolerances established. Nine minor crops were selected as examples to support the extension of the exclusive use period for cyprodinil. The nine crops include Basil, Blueberries, Broccoli, Cabbage, Chives, Lychee, Mustard Greens, Pistachio and Raspberry. A narrative discussion of how cyprodinil satisfies the required criteria is presented in a separate discussion for each minor crop within this application. In summary, the following FIFRA § 3(1)(F)(ii) qualifying criteria are satisfied for each minor crop claimed within this application:

- Each minor crop meets the statutory definition of being a minor use,
- Each minor use was registered after August 3, 1996,
- Each minor use was first approved during the required 7-year window following initial registration of a product containing cyprodinil,
- Syngenta has provided sufficient information to show that at least one of the four qualifying extension criteria has been satisfied for each minor crop. For each minor crop cyprodinil has superior biological efficacy, significant application rate advantages reducing environmental loading, and resistance management partnership benefits.

III. STATUTORY FOUNDATION

FIFRA § 3(1)(F)(ii) provides a one-year extension of the exclusive use period for each 3 minor uses approved after August 3, 1996 and within 7 years of the commencement period of the exclusive use period up to a total of 3 additional years for all minor uses registered by the Administrator.

The registrant or applicant must first demonstrate that each minor use it claims qualifies under the statutory definition of minor use at FIFRA section 2(II). The definition of minor use at FIFRA section 2(II) means the use of a pesticide on an animal, on a commercial agricultural crop or site, or the protection of public health where:

1. the total US acreage for the crop is less than 300,000 acres, as determined by the Secretary of Agriculture; or

2. the EPA Administrator, in consultation with the Secretary of Agriculture, determines that, based on information provided by an applicant for registration or a registrant, the use does not provide sufficient economic incentive to support the initial registration or continuing registration of a pesticide for such use and

- there are insufficient efficacious alternative pesticides available for the use;
- the alternatives to the pesticide use pose greater risks to the environment or human health;
- the minor use pesticide plays or will play a significant part in managing pest resistance; or
- the minor use pesticide plays or will play a significant part in an integrated pest management program.

The applicant must provide sufficient information that will allow the Administrator, in consultation with the Secretary of Agriculture, to determine that, in addition to it qualifying as a "minor use", at least one of the following four qualifying exclusive use extension criteria is met:

- Qualifying Criterion 1 – there are insufficient efficacious alternative registered pesticides available for the use (Biological Efficacy);
- Qualifying Criterion 2 – the alternatives to the minor use pesticide use pose greater risks to the environment or human health (Risk);
- Qualifying Criterion 3 – the minor use pesticide plays or will play a significant role in managing pest resistance (Pest Resistance); or
- Qualifying Criterion 4 – the minor use pesticide plays or will play a significant part in an integrated pest management program (IPM Program).

IV. CYPRODINIL QUALIFIES FOR EXCLUSIVE USE EXTENSION

- **Cyprodinil and the Nine (9) Identified Minor Use Crops Were Registered After August 3, 1996**

Cyprodinil received its first EPA registration on April 10, 1998 with the registrations of two products containing cyprodinil and named Cyprodinil Technical (EPA Registration Number 100-811) and Vanguard WG (EPA Registration Number 100-828) (Appendix II – Notice of Product Registration and stamped label for Cyprodinil Technical and Vanguard WG). On August 21, 2001 an additional product also containing cyprodinil named Switch 62.5WG (EPA Registration Number 100-953) was registered. All minor use crops claimed within this application were approved following the initial registration date for cyprodinil and appear on product labeling for Switch 62.5WG.

- **All Nine (9) Minor Use Crops Were Approved Within Seven Years of First Cyprodinil Registration**

Syngenta markets cyprodinil for use on many crops to control a wide spectrum of diseases. Following the initial registration of Cyprodinil Technical and Vanguard WG, all minor use crops claimed in this application were approved by EPA at various dates during the 7-year period. The deadline date for cyprodinil for a minor use crop to be

approved for it to be an eligible minor use crop is April 10, 2005 (7 year window date following first registration on April 10, 1998).

To demonstrate that approvals of all of the claimed minor use crops were achieved within the required period, the EPA stamped approved label for Switch 62.5WG that was last approved before April 10, 2005 is attached. This label was approved by EPA on October 14, 2004 and includes directions for use on all of the claimed minor use crops referenced in this application. (Appendix IV – A Notice of registration and EPA stamped label for Switch 62.5WG and dated October 14, 2004).

- **Syngenta Markets Cyprodinil for Use on the Claimed Minor Use Crops**

Syngenta markets two branded products containing cyprodinil. These products include Switch 62.5WG that is marketed in the vegetable, fruit and specialty crop segments and Vanguard WG that is marketed for use on almonds, grapes, pome fruits and stone fruits.

Directions for use on all minor use crops claimed within this application are approved on the current EPA accepted version of the Vanguard WG and Switch 62.5WG label.

Syngenta markets cyprodinil for use on the nine (9) minor use crops in this application using the Switch 62.5WG product as shown below. A copy of the marketed container label for Switch 62.5WG is shown in Appendix VI.

Product	Brand Name	Minor Uses on EPA Approved Label
Switch 62.5WG, EPA Reg. No. 100-953	Switch 62.5WG	Basil, Blueberries, Broccoli, Cabbage, Chives, Lychee, Mustard Greens, Pistachio and Raspberry

- **Each of the Nine (9) Identified Minor Use Crops Qualifies Under FIFRA section 2(II) as a Minor Use Crop**

Each minor use crop supporting this application is an agronomic crop that meets the criteria for being a minor use on the basis that the total acreage for the crop in the United States is less than 300,000 acres as recognized by the Department of Agriculture.

To assure that a claimed crop is a minor use crop and therefore eligible to support an application for exclusive use extension, Syngenta surveyed two recognized public data resources that report crop production in the United States. Our survey of these data sources confirmed that the total United States acreage for each crop would classify it as a "Minor Use Crop" as described within the Food Quality Protection Act at Subtitle A-Minor Use Crop Protection Section 210 (a) (II) (1). The two reference sources surveyed are listed below with their website addresses:

1. National Agricultural Statistics Association 2002 Census of Agriculture report
http://www.nass.usda.gov/Census_of_Agriculture/index.asp

2. National Site for the USDA Regional IPM Centers Information System
<http://www.ipmcenters.org/>

- Each of the Nine (9) Minor Use Crops Was Registered Within the 7-Year Window and Applicable Residue Data Were Generated to Support the Minor Use Crop

The chart below lists the nine minor use crops supporting this application, the respective crop grouping, the MRID number(s) assigned to the residue data supporting the minor use crops tolerance and reference to a Syngenta product that is marketed for use on the minor crop.

Minor Use Crop Name on Label	Crop Group Number & Name	Cyprodinil Product/Registration Number/Label Approval Date	MRID Number Supporting Minor Use Crop Residue Data
Basil	19 – Herbs and Spices	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45795301 45795401
Blueberries	13B – Bushberry Subgroup	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45522201
Broccoli	5-A Brassica Head and Stem Group	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45726001
Cabbage	5-A Brassica Head and Stem Group	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45839801
Chives	19A - Herb Subgroup	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45795302 45795402
Lychee	Tropical fruit	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45660001
Mustard Greens	5 – Brassica (cole) Leafy Vegetables	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45726002
Pistachio	14 – Tree Nuts Group	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45544601
Raspberry	13 – Berries group	Switch 62.4 WG / EPA Reg. No. 100-953 / October 14, 2004	45382801

V. Procedure Used to Identify, Evaluate and Group Alternative Active Ingredients – for purposes of comparisons under exclusive use qualifying criterion 1 (biological efficacy)

The active ingredients and products approved for use on the minor use crops claimed in this application were identified by searching published tolerances from the 40 CFR §180 and the EPA Pesticide Product Label System (PPLS).

EPA can independently confirm the accuracy of these comparisons referencing the eCFR and PPLS:

http://www.access.gpo.gov/nara/cfr/waisidx_05/40cfr180_05.html
<http://www.epa.gov/pesticides/pestlabels/>.

Utilizing these data and commercial experience, Syngenta then screened the representative labels for registered products containing the active ingredients approved for use on the minor use crops and selected those active ingredients considered to have performance characteristics that were competitive to cyprodinil.

There are many fungicides registered for control of plant diseases. In today's competitive market, cyprodinil provides broad spectrum control of economically important pest diseases, and is considered an effective competitor to a large number of active ingredients that are labeled on the same crops. While there are many competitive products registered for use on the crops listed in this application, many are relatively old products for which performance is limited when compared with cyprodinil.

Cyprodinil was compared for each crop to the other active ingredients registered on that crop. Specifically, the diseases claimed on each product label were compared to those on the cyprodinil label. In most cases, there was a difference between cyprodinil and other registered products. Within the total of actives registered for any one crop, three distinct groups were identified. These three groups are described as the:

- (1) *Biological Products,*
- (2) *Partial Alternatives that are Commercially Used* for control of specific diseases, and
- (3) *Partial Alternatives Not Widely Used* because they provide a lower level of efficacy or other characteristic that limits commercially acceptable use.

The products in the Groups 1 and 3 are excluded from the narrative crop discussions because they fail to provide reasonable fungicidal performance and therefore do not qualify as viable effective alternatives to cyprodinil.

These groups are described briefly below as to general use.

Biologicals:

Several biological products are registered for control of one or more diseases on several of the crops included in this petition. But, biological products are characterized with multiple deficiencies compared to conventional fungicides. Of most concern is their high susceptibility to environmental conditions that negatively affect expected efficacy. Because of marginal efficacy, these products are only used when minor disease

infestations are expected or when alternating with standard fungicides. Biological products are characterized as having only preventative action with no curative action, nor "kick-back" action. Application rates are high, and they must generally be applied in high water volumes per acre. The products have a relatively poor shelf life and need special cool storage conditions. High cost for what the products deliver further limits commercial acceptance. The products mentioned below are therefore not considered as viable alternatives to provide commercial control, but they will be identified where appropriate as being registered on the specific crop (i.e., are registered on a specific crop and or they appear in use reporting).

Bacillus pumilus strain QST 2808: Sonato® ASO (69592-13)

Gliocladium catenulatum Strain J1446: Primastop Biofungicide Powder® (64137-8)

Partial Alternatives that are Commercially Used for Control of Specific Diseases:

A partial alternative is identified as a product that has some of the benefits of cyprodinil, but not all, and therefore cannot completely replace the cyprodinil product. Within the framework of these efficacy comparisons, this means that the alternative does not provide the same biological benefits – such as control of the complete cyprodinil spectrum. In some cases, other characteristics are considered, including application rate and timing flexibility, number of applications to a crop, or comparisons of relative activity compared to the commercial standards in the current marketplace. These partial alternatives can be divided into two groups: highly effective - low rate products and the older higher rate products with a lower level of fungicidal activity. This latter group is considered of lesser importance and will not be considered as a realistic alternative in the different crop sections, but they will be identified, where appropriate, as being registered on the specific crop.

Azoxystrobin: (Abound® 100-1098):

Abound is a broad spectrum, preventative, low rate fungicide with systemic and curative properties used for control of many important plant diseases. It can be applied as a foliar spray, in alternating spray programs, or in tank mixes with other products. When compared to cyprodinil on certain crops, there are diseases it does not control. There are also fungal resistance issues, as there are disease organisms that have developed resistance to azoxystrobin. There is a disease management program that includes alternation or tank mixes between it and other labeled fungicides that have a different mode of action. This is essential to prevent pathogen population from developing resistance to azoxystrobin. But it should not be alternated or tank-mixed with fungicides to which resistance has already developed. Continual use of azoxystrobin may allow less sensitive strains of pathogens to increase in the population and reduce the efficacy of azoxystrobin. Since it is a strobilurin fungicide, it should not be alternated with other strobilurins. Cyprodinil has a different mode of action, and can be used in a resistance management program that limits the number of consecutive azoxystrobin applications. For these reasons, azoxystrobin is considered an effective partial alternative, with limitations in spectrum and number of consecutive applications.

Trifloxystrobin: Gem® 500SC (264-826)

Gem is similar to Azoxystrobin in both efficacy and mode of action. There is some variation in the spectrum of diseases on the product labels for some crops, but

both do not claim control of Botrytis. Within the crops in these comparisons, Gem is only involved in pistachio. There are also resistance issues, as there are disease organisms that have developed resistance. There is a disease management program that includes alternation or tank mixes between it and other labeled fungicides that have a different mode of action. This is essential to prevent pathogen population from developing resistance to trifloxystrobin; but it should not be alternated or tank mixed with fungicides to which resistance has already developed. Continual use of trifloxystrobin may allow less sensitive strains of pathogens to increase in the population and reduce the efficacy of trifloxystrobin. Since it is a strobilurin fungicide, it should not be alternated with other strobilurins. Cyprodinil has a different mode of action, and can be used in a resistance management program that limits the number of consecutive trifloxystrobin applications. For these reasons, trifloxystrobin is considered an effective partial alternative, with limitations in spectrum and number of consecutive applications.

Pyraclostrobin: Cabrio® EG Fungicide (7969-187) and Pristine® Fungicide (7969-199)

Cabrio and Pristine are similar to Azoxystrobin in both efficacy and mode of action. There is some variation in the spectrum of diseases on the product labels for some crops, but both do not claim full control of Botrytis. Within the crops in these comparisons, Cabrio is only involved in raspberry and blueberries. There are also resistance issues, as there are disease organisms that have developed resistance. There is a disease management program that includes alternation, or tank mixes between it and other labeled fungicides that have a different mode of action. This is essential to prevent pathogen population from developing resistance to pyraclostrobin; but it should not be alternated or tank mixed with fungicides to which resistance has already developed. Continual use of pyraclostrobin may allow less sensitive strains of pathogens to increase in the population and reduce the efficacy of pyraclostrobin. Since it is a strobilurin fungicide, it should not be alternated with other strobilurins. Cyprodinil has a different mode of action, and can be used in a resistance management program that limits the number of consecutive pyraclostrobin applications. For these reasons, pyraclostrobin is considered an effective partial alternative, with limitations in spectrum and number of consecutive applications.

Pyrimethanil: Scala® SC Fungicide (264-788)

Scala is within the same group of chemistry as cyprodinil and has a similar disease control spectrum. Within the crops claimed in this petition, it and cyprodinil are registered only on pistachio. When considering that the resistance management information on product labels restricts the number of consecutive applications by mode of action, there are relatively few alternatives for control of Botrytis and Alternaria diseases. For this reason, it is not unreasonable to have more than one product from the same chemical family.

Boscalid: Endura® Fungicide (7969-197)

Endura belongs to the group of respiration inhibitors classified as carboxamides, or Target Site of Action Group 7 fungicides. It has a protective effect because it inhibits spore germination and a curative-eradicator effect because it inhibits mycelial growth and sporulation of the fungus on the leaf surface. It can be applied pre- or post-infection. Optimum disease control is achieved when used in a rotation program with other fungicides. It contains a resistance management recommendation against predominant and repeated use to prevent buildup of fungal isolates resistant to this family of fungicides. In order to maintain the performance of boscalid, the directions for

use for each labeled crop lists the maximum number of sequential applications and the total number of applications permitted per season. Thus, boscalid is considered to be a product that cyprodinil would be rotated with in the normal sequence to delay the expansion of resistant fungal isolates. But boscalid does not control Botrytis, on which cyprodinil is efficacious, so it can be considered only a partial alternative for cyprodinil.

Thiophanate methyl 85WDG: (72167-18-66222)

Within the crops in this comparison, this carbamate fungicide is only registered on pistachios. The label specifies that only one application should be applied and then alternated with a different mode of action product. It has a high application rate for the diseases it controls. Thiophanate methyl is not registered for Alternaria, so it can only be considered a partial alternative for cyprodinil.

Iprodione: Rovral® 4 (264-482)

Rovral is a dicarboximide fungicide that is effective on many diseases. On raspberries, it is only registered for control of Botrytis, with a maximum of four applications per season. It can be used in rotation with cyprodinil for control of this disease; but in addition to Botrytis, Cyprodinil is registered for control of Alternaria, Colletotrichum, and Monilinia. Because of this limited disease control spectrum, iprodione can only be considered as a partial alternative for cyprodinil.

Fenhexamid: Elevate® 50WDG (66330-35)

Elevate is a hydroxylanilide protectant fungicide for control of Botrytis in raspberries. The label specifies that there can be only two consecutive applications that must be followed with two application of a product with a different mode of action. The annual limit is 3.0 pounds active ingredient per acre per season. Its spectrum is limited, not being registered for control of Alternaria, Colletotrichum, or Monilinia diseases. Thus it can only be considered as a partial alternative to cyprodinil, which controls all of these diseases.

Chlorothalonil: Bravo WeatherStik®(50534-188-100)

Bravo is registered for use on blueberries for suppression of Monolinia and Colletotrichum diseases. It is a high rate product at 3 pounds AI/A that should be followed with an alternative product of a different mode of action. The total rate that can be applied is 9.0 pounds per acre per season. Thus, it can only be considered as a partial alternative, at best, for use in resistance management programs, as it does not provide full control of the disease on which cyprodinil is effective.

Partial Alternatives Not Widely Used:

There are several products that hold registrations for control of one of more diseases controlled by cyprodinil in the crops within this application. As a general group, they are relatively ineffective, compared to the group above, or are not used to any extent because of other biological or chemical limitations. For these reasons, while they are mentioned within the narrative discussions for each crop as being registered, they are not considered commercial alternatives that reach the commercial expectations growers have to be considered as cyprodinil alternatives and are, therefore, excluded from consideration as viable effective alternatives to cyprodinil.

Captan 80WG (66222-58)

Copper Basic Micro Flo Copper 4L (51036-28)
Copper Hydroxide Blue Shield 50WP (51036-270)
Copper Hydroxide Kocide®2000 (352-656)
Copper Sulfate basic Copper (51036-24)
Copper oxychloride Micro Flo Copper 50WP (51036-124)
Basic Copper Sulfate Cuprofix 40 Disperss® DF (4581-413)
Cupros Oxide Nordox® 75WG 48142-4
Cupris oxide Chem COP 50 Fungicide (26883-20)

Cinnamaldehyde Cinnacure® A3005 (58866-12)

Potassium bicarbonate Carbonic Acid Armicarb® 100 (5905-541)
Potassium salts of fatty acids M-Pede® (62719-515)

Sulfur 90W (19713-238)
Calcium polysulfide Lime Sulfur (51036-226)

Ziram® 4L (19713-93)

VI. Biological Profile for Cyprodinil

Cyprodinil is a broad spectrum pyrimidinamine systemic fungicide that can be used on many crops. Its mode of action is inhibition of amino acid synthesis which is essential for fungal growth. There is also inhibition of secretion of hydrolytic enzymes (produced by the fungi) which support the penetration of the fungi into leaves. Specifically it inhibits the biosynthesis of methionine which is required for fungal growth. It acts at the beginning of, or just after the initiation of plant penetration by the fungi. Cyprodinil interferes with the fungal life cycle by inhibiting penetration and disruption of inter- and intra-cellular mycelial growth. Because of its lipophilic properties, cyprodinil is easily taken up into the cuticle and wax layers of plant leaves and fruits. From there it continuously distributes and penetrates into the other plant parts.

Cyprodinil is highly active at low temperatures, with preventive and curative activity, and no cross-resistance to current market products. Its unique mode of action makes it an excellent fit with IPM spray programs. From the environmental side, it is immobile in the soil, has fast degradation in soil by microorganisms, has fast photolytic degradation and is non-toxic to birds and bees. Applied as a foliar fungicide, cyprodinil provides long lasting protective activity and curative activity. It does not have strong eradicated activity.

Cyprodinil Resistance Management (Important for Exclusive Use Extension Qualifying Criterion 3 – Plays a significant role in managing pest resistance)

As a member of the anilinopyrimidine chemical class of fungicides, a Fungicide Resistance Action Committee working group has been established to recommend best practices to minimize the development of resistance. This class of chemistry has shown no cross-resistance with other fungicide groups. After use of these products, there is field evidence that Botrytis populations have shown the occurrence of a low frequency of less sensitive isolates without impacting efficacy in the field. In order to minimize the risk of increasing the frequencies of resistance, anti-resistance strategies must be

implemented in order to assure the successful use of this family of chemistry over long periods of time.

VII. DISCUSSION OF MINOR USE CROPS AND BIOLOGICAL EFFICACY OF CYPRODINIL (EXCLUSIVE USE EXTENSION QUALIFYING CRITERION 1: INSUFFICIENT EFFICACIOUS ALTERNATIVES)

A discussion for each claimed minor use crop is presented below. This section identifies potential alternative fungicide active ingredients that are registered on the specific minor use crop and have been classified as a *partial alternative*. The biological efficacy attributes of these *partial alternatives* are based on the diseases listed on their label as being controlled and are compared with those of cyprodinil. A conclusion on whether cyprodinil is superior is presented.

Basil

There are insufficient efficacious alternatives to the use of cyprodinil on basil, and in addition basil qualifies as a minor use crop for the purpose of an exclusive use extension.

Cyprodinil is registered for use on basil and is labeled to control two diseases (Alternaria leaf spot and Botrytis leaf blight).

A total of four other active ingredients are registered for use on basil including Bacillus pulliam spp., potassium bicarbonate, Gliocladium catenulatum, and cinnamaldehyde. While these products list the diseases on their label that cyprodinil controls, these products have significant performance weaknesses when compared to cyprodinil and therefore are insufficient efficacious alternatives to cyprodinil.

Basil Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives		
Fungal Disease	Scientific Name	Cyprodinil Vanguard WG 100-828
Alternaria Leaf Spot	Alternaria spp.	X
Botrytis Leaf Blight	Botrytis spp.	X

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for use on basil.

Biological control agents such as Bacillus pulliam spp. and Gliocladium catenulatum are sensitive to certain crop growing environments and climatic conditions and often fail to

provide adequate efficacy when compared to cyprodinil. This weakness leads to them being classified as providing inconsistent and less than acceptable performance. Alternatively, cyprodinil is highly efficacious against the diseases listed above and provides consistent performance across a wide spectrum of growing conditions and under diverse climatic conditions.

Potassium bicarbonate and cinnamaldehyde are "early vintage" pesticide products which fail to provide any measurable degree of control of the two diseases listed above for which cyprodinil is highly effective. Many published articles that speak to the diseases associated with basil production do not reference these products nor do they indicate that they can be effectively used to control these two diseases controlled by cyprodinil. For these reasons these products are not efficacious alternatives to cyprodinil.

Thus, since the other active ingredients registered for use on basil have significant performance and reliability issues and cyprodinil provides reliable biological efficacy superior to them, cyprodinil is classified as a superior product for use on basil.

Since cyprodinil has a broader spectrum of biological efficacy and is superior to other products registered for use on basil, there are insufficient efficacious registered alternatives to cyprodinil for use on basil.

Blueberry

There are insufficient efficacious alternatives to the use of cyprodinil on blueberry, and in addition blueberry qualifies as a minor use crop for the purpose of an exclusive use extension.

Cyprodinil controls four major diseases including Alternaria, Colletotrichum, Botrytis and Monilinia species. None of the potential alternatives provides control of this broad spectrum. Azoxystrobin, Captan, Chlorothalonil, Pyraclostrobin, Fosetyl-al, and Ziram are registered for use on blueberry but they are not alternatives to cyprodinil because they neither control as broad a disease spectrum nor provide the consistent commercially acceptable control that cyprodinil claims on its label at a very low application rate.

Blueberry qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy of cyprodinil versus the potential alternatives is presented below:

Blueberry Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives							
Fungal Disease	Scientific Name	Cyprodinil Vanguard WG 100-828	Azoxystrobin Abound 100-1098	Chlothalonil Bravo Weather Stik 50534-188	Pyraclostrobin Cabrio 7969-187	Boscalid + pyraclostrobin Pristine Fungicide 7969-199	Fosetyl-al Aliette WDG 264-516
Alternaria Fruit Rot	Alternaria tenuissima	X					S
Alternaria Fruit Rot	Alternaria spp.		X		X	X	
Anthracnose	Colletotrichum spp.	X			X	X	
Anthracnose Fruit Rot	Colletotrichum gloeosporoides		X				X
Anthracnose Ripe Rot	C. gloeosporoides			S			
Botrytis Fruit Rot	Botrytis cinerea	X					
Mummy Berry	Monilinia vaccinicorymbosi	X		S			
Mummy Berry	Monilinia spp.					X	
Mummy Berry	Vaccinium spp.		X				

S – label claims suppression only

X – disease is listed on label for products containing the respective active ingredient.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of the Alternaria, Colletotrichum, Botrytis and Monilinia diseases. No other product controls this broad spectrum. Azoxystrobin does not control Botrytis or Monilinia. Pyraclostrobin does not control Monilinia and Botrytis. Captan controls only the mummy berry species Vaccinium spp. Bacillus p. is also registered but it does not control Botrytis. Chlorothalonil only provides suppression of Colletotrichum and Monilinia species. The potassium bicarbonate carbonic acid is relatively weak and has a limited spectrum. Ziram only controls a mummy berry species. Fosetyl-al only claims control of anthracnose fruit rot and provides only suppression of Alternaria fruit rot and does not control other diseases controlled by cyprodinil.

The above table shows that cyprodinil is labeled for control of four diseases and while one or more of these appears on labels of other active ingredients, none have the broad spectrum of cyprodinil. Thus, there are insufficient efficacious alternatives to cyprodinil for use on blueberries.

Broccoli

There are insufficient efficacious alternatives to the use of cyprodinil on broccoli, and in addition broccoli qualifies as a minor use crop for the purpose of an exclusive use extension.

Three active ingredients including, Bacillus p., Potassium bicarbonate, and Sulfur are registered for use on broccoli but are not efficacious alternatives to cyprodinil. They are unacceptable alternatives because they do not provide the consistent commercially acceptable control of powdery mildew (*Erysiphe polygoni*) that cyprodinil claims on its label at a very low application rate.

Broccoli qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy for cyprodinil against powdery mildew is presented below:

Broccoli Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives		
Fungal Disease	Scientific Name	Cyprodinil Vangard WG 100-828
Powdery Mildew	<i>Erysiphe polygoni</i>	X

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of powdery mildew on broccoli.

The above table shows that cyprodinil is labeled for control of powdery mildew and while this disease occurs on three other product labels, they are not considered efficacious alternatives. Thus, there are insufficient efficacious alternatives to cyprodinil for use on broccoli.

Cabbage

There are insufficient efficacious alternatives to the use of cyprodinil on cabbage, and in addition cabbage qualifies as a minor use crop for the purpose of an exclusive use extension.

Three active ingredients including, Bacillus p., Potassium bicarbonate, and Sulfur are registered for use on cabbage but are not efficacious alternatives to cyprodinil. They are unacceptable alternatives because they do not provide the consistent commercially acceptable control of powdery mildew (*Erysiphe polygoni*) that cyprodinil claims on its

label at a very low application rate. Bacillus p. does not provide consistent control and other alternatives are high rate products and provide a lower level of efficacy.

Cabbage qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy for cyprodinil against powdery mildew is presented below:

Cabbage Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives		
Fungal Disease	Scientific Name	Cyprodinil Vanguard WG 100-828
Powdery Mildew	Erysiphe polygoni	X

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of powdery mildew on cabbage.

The above table shows that cyprodinil is labeled for control of powdery mildew and while this disease occurs on three other product labels, they are not considered efficacious alternatives. Thus, there are insufficient efficacious alternatives to cyprodinil for use on cabbage.

Chives

There are insufficient efficacious alternatives to the use of cyprodinil on chives, and in addition chives qualify as a minor use crop for the purpose of an exclusive use extension.

Cyprodinil controls two important diseases of chives including Alternaria and Botrytis species. None of the potential alternatives provides control of both these diseases. Bacillus p., Gliocladium catenulatum and Cinnamaldehyde are registered for use but these products are not efficacious alternatives to cyprodinil. They are not acceptable alternatives because they do not control both diseases nor provide the consistent commercially acceptable control that cyprodinil claims on its label at a very low application rate.

Chives qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy of cyprodinil versus the potential alternatives is presented below:

Chives Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives		
Fungal Disease	Scientific Name	Cyprodinil Vangard WG 100-828
Alternaria Leaf Spot	Alternaria spp.	X
Botrytis Leaf Blight	Botrytis spp.	X

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of the Alternaria and Botrytis diseases. No other product controls this spectrum. Bacillus p. and Gliocladium catenulatum are registered for the control of diseases incited by Alternaria and Botrytis, respectively; however, these biological products are subject to environmental variables and do not consistently provide the expected level of control. Cinnamaldehyde controls Botrytis, but requires a high application rate and this does not consistently provide the desired level of control.

The above table shows that cyprodinil is labeled for control of two diseases and while one or more of these appears on labels of other active ingredients, none have the broad spectrum of Cyprodinil. Thus, there are insufficient efficacious alternatives to cyprodinil for use on chives.

Mustard Greens

There are insufficient efficacious alternatives to the use of cyprodinil on mustard greens, and in addition mustard greens qualify as a minor use crop for the purpose of an exclusive use extension.

Six active ingredients including, Bacillus p., Potassium bicarbonate, Sulfur, Boscalid, Cinnamaldehyde, and potassium salts of fatty acids are registered for use on mustard greens but are not efficacious alternatives to cyprodinil. They are not acceptable alternatives because they do not provide the consistent commercially acceptable control of powdery mildew (Erysiphe polygoni) that cyprodinil claims on its label at a very low application rate. The Bacillus p. does not provide consistent control and others are high rate products while providing a lower level of efficacy. Boscalid only claims suppression on its label, making it clear that this active ingredient has a lower level of efficacy than cyprodinil.

Mustard greens qualify as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy for cyprodinil against powdery mildew is presented below:

Mustard Greens Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives			
Fungal Disease	Scientific Name	Cyprodinil Vangard WG 100-828	Boscalid Endura 7969-197
Powdery Mildew	Erysiphe polygoni	X	S

S – label claims suppression only

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of powdery mildew on mustard greens.

The above table shows that cyprodinil is labeled for control of powdery mildew and while this disease occurs on six other product labels, they are not considered efficacious alternatives. Thus, there are insufficient efficacious alternatives to cyprodinil for use on mustard greens.

Lychee

There are insufficient efficacious alternatives to the use of cyprodinil on lychee, and in addition lychee qualifies as a minor use crop for the purpose of an exclusive use extension.

Four active ingredients including, azoxystrobin, copper hydroxide, copper sulfate and cupros oxide are registered for use on lychee but are not considered to be efficacious alternatives to cyprodinil because they fail to claim control of two diseases that cyprodinil claims on its label.

Lychee qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. The biological efficacy for cyprodinil against certain diseases is presented below:

Lychee Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives		
Fungal Disease	Scientific Name	Cyprodinil Vangard WG 100-828
Botrytis Fruit Rot	Botrytis spp.	X
Alternaria Fruit Rot	Alternaria spp.	X

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for use on lychee.

The above table shows that cyprodinil is labeled for control of two foliar diseases including Botrytis Fruit Rot (*Botrytis* spp.), and Alternaria Fruit Rot (*Alternaria* spp.) and these diseases are not claimed on labeling for the other products registered for use on lychee.

Since cyprodinil is labeled for control of diseases that are not on the alternative product's label cyprodinil has a broader spectrum of biological efficacy than other alternatives and is therefore superior to the other registered alternative products for use on lychee.

Pistachio

There are insufficient efficacious alternatives to the use of cyprodinil on pistachio, and in addition pistachio qualifies as a minor use crop for the purpose of an exclusive use extension.

Cyprodinil controls two major diseases including Alternaria and Botrytis species. Most of the potential alternatives do not provide control of this disease spectrum. Azoxystrobin, Bacillus p., Potassium bicarbonate Carbonic Acid, Copper hydroxide, Trifloxystrobin, Boscalid, Cinnamaldehyde, and Thiophanate methyl are registered for use on pistachio but are not considered to be efficacious alternatives to cyprodinil. These active ingredients are not acceptable alternatives because they do not control as broad a disease spectrum or provide the consistent commercially acceptable control that cyprodinil claims on its label at a very low application rate. Pyrimethanil controls both Alternaria and Botrytis and is considered a viable alternative to cyprodinil.

Pistachio qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy of cyprodinil versus the potential alternatives is presented below:

Pistachio Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives								
Fungal Disease	Scientific Name	Cyprodinil Vangard WG 100-828	Azoxystrobin Abound 100-1098	Pyrimethanil Scala 264-788	Trifloxystrobin Gem 500SC 264-826	Boscalid Endura 7969-197	Boscalid + pyraclostrobin Pristine Fungicide 7969-199	Thiophanate-Methyl Thiophanatemethyl 4.5AG 51036-432
Alternaria Leaf Spot	Alternaria alternata			X				
Alternaria	Alternaria alternata	X						
Alternaria Late Blight	Alternaria alternata		X		X	X	X	
Botrytis	Botrytis spp.	X						
Shoot blight	Botrytis							X
Jacket rot, green fruit rot	Botrytis cinerea			X				
Blossom and Shoot Blight	Botrytis cinerea			X				

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of the Alternaria and Botrytis diseases. Botrytis is not controlled by azoxystrobin, trifloxystrobin, boscalid, and the biological product Bacillus p. Alternaria is not controlled by potassium bicarbonate carbonic acid, cinnamaldehyde, and thiophanate-methyl. While copper hydroxide is labeled for both diseases, it is relatively weak on both and not considered a viable alternative. Pyrimethanil is similar to cyprodinil and is considered a realistic alternative.

The above table shows that cyprodinil is labeled for control of two diseases. Each has deficiencies, except for pyrimethanil, which can be a realistic alternative. With only one product of similar activity, there are insufficient efficacious alternatives to cyprodinil for use on pistachios.

Raspberry

There are insufficient efficacious alternatives to the use of cyprodinil on raspberry, and in addition raspberry qualifies as a minor use crop for the purpose of an exclusive use extension.

Cyprodinil controls four major diseases including *Alternaria*, *Colletotrichum*, *Botrytis* and *Monilinia* species. None of the potential alternatives provides control of this broad spectrum. Copper products, Iprodione, Sulfur, Pyraclostrobin, Boscalid, Cinnamaldehyde, Captan and fenhexamid are registered for use on raspberries but are not efficacious alternatives to cyprodinil because they neither control as broad a disease spectrum, nor provide the consistent commercially acceptable control that cyprodinil claims on its label at a very low application rate.

Raspberry qualifies as a minor use crop that supports an extension of the exclusive use period for cyprodinil based upon cyprodinil satisfying the biological efficacy qualifying criteria. A comparison of the biological efficacy of cyprodinil versus the potential alternatives is presented below:

Raspberry Diseases Controlled By Cyprodinil Compared To Registered Partial Alternatives						
Fungal Disease	Scientific Name	Cyprodinil Vanguard WG 100-828	Iprodione Rovral 4 264-482	Pyraclostrobin Cabrio 7969-187	Boscalid Endura 7969-197	Fenhexamid Elevate 50WDG 66330-35
Alternaria Fruit Rot	<i>Alternaria tenuissima</i>	X				
Alternaria Fruit Rot	<i>Alternaria</i> spp.			X		
Anthracnose	<i>Colletotrichum</i> spp.	X		X		
Anthracnose	<i>Elsinoe</i> spp.			X		
Botrytis Fruit Rot	<i>Botrytis cinerea</i>	X	X			
Botrytis blight	<i>Botrytis cinerea</i>					
Gray mold	<i>Botrytis cinerea</i>			S	X	X
Mummy Berry	<i>Monilinia vaccinicorymbosi</i>	X				
Monilia blight	<i>Monilinia</i> spp.			S		

S – label claims suppression only

X – disease is listed on label for products containing the respective active ingredient.

The biological efficacy qualities of cyprodinil are compared with the registered alternatives in the following discussion.

Exclusive Use Qualifying Criterion 1 – Biological Efficacy (Insufficient Efficacious Alternatives)

Cyprodinil satisfies this criterion because there are insufficient efficacious registered alternatives to cyprodinil for control of the *Alternaria*, *Colletotrichum*, *Botrytis* and *Monilinia* diseases. No other product controls this broad spectrum. Azoxystrobin does not control *Alternaria*, *Colletotrichum*, or *Boyrytis*, and *Monilinia*. Pyraclostrobin does not

control Monilinia and only claims suppression of Botrytis. Captan controls only Anthracnose and Botrytis. The copper products, iprodione, fenhexamid, and Boscalid control only one of the diseases controlled by Cyprodinil.

The above table shows that cyprodinil is labeled for control of four diseases and while one or more of these appears on labels of other active ingredients, none have the broad spectrum of Cyprodinil. Thus, there are insufficient efficacious alternatives to cyprodinil for use on raspberries.

Cyprodinil Resistance Management (Important for Exclusive Use Extension Qualifying Criterion 3 – Plays a significant role in managing pest resistance)

As a member of the anilinopyrimidine chemical class of fungicides, a Fungicide Resistance Action Committee working group has been established to recommend best practices to minimize the development of resistance. This class of chemistry has shown no cross-resistance with other fungicide groups. The importance of this benefit is clear from the inclusion of cyprodinil in the USDA Pest Management Strategic Plans.

- **PEST MANAGEMENT STRATEGIC PLANS (PMS PLANS)**

In addition to the above specifics, cyprodinil is recognized as a valuable component of PMS Plans.

The USDA Office of Pest Management Policy (OPMP) is facilitating the production of Pest Management Strategic Plans (PMS Plans) which are developed by growers, commodity associations, land-grant specialists, food processors, crop consultants, and EPA. These plans address pest management needs and priorities for individual commodities.

Each plan focuses on commodity production in a particular state or region. The plans take a pest-by-pest approach to identifying the current management practices (chemical and non-chemical) and those under development. Plans also state the commodity's priorities for research, regulatory activity, and education/training programs needed for transition to alternative pest management practices.

Cyprodinil is referenced in many of the PMS Plans as a valuable control agent. The following table provides a reference to PMS Plans where products containing cyprodinil are listed.

Crop	PMSP Plan Name	Internet Address
Lychee	Tropical Fruit Management Strategic Plan (PMSP), March 31, 2003. Homestead, FL (35 pages)	http://www.ipmcenters.org/pmsp/pdf/FLTropicalfruit.pdf
Blueberry	Three separate PMS Plans are in place for Oregon	http://www.ipmcenters.org/pmsp/pdf/ORWABlueberry.pdf

	and Washington, Michigan, and New England States	http://www.ipmcenters.org/pmsp/pdf/MIblueberry.pdf http://www.ipmcenters.org/pmsp/pdf/NE_Blueberry_PMSP.pdf
Carrots	Three Plans for California, Michigan and New Jersey	http://www.ipmcenters.org/pmsp/pdf/CACarrot.pdf http://www.ipmcenters.org/pmsp/pdf/micarrots.pdf http://www.ipmcenters.org/pmsp/pdf/NJ_CarrotPMSP.pdf
Peach	Plans are in place for California, Florida, Georgia, Michigan, New Jersey, North Carolina, Pennsylvania and South Carolina	http://www.ipmcenters.org/pmsp/pdf/CAPEACHPMSP.pdf http://www.ipmcenters.org/pmsp/pdf/easternpeach.pdf http://www.ipmcenters.org/pmsp/pdf/EastPeach.pdf http://www.ipmcenters.org/pmsp/pdf/njpeach.pdf
Pear	A Pest Management Plan for Pear Production in California	http://www.ipmcenters.org/pmsp/pdf/CAPear.pdf
Plum	A Pest Management Plan for Plum Production in California	http://www.ipmcenters.org/pmsp/pdf/CAPLUMPMSP.pdf
Prune	A Pest Management Plan for California Prune Production	http://www.ipmcenters.org/pmsp/pdf/caprune.pdf
Raspberry	PMSP for Caneberry Production in Washington and Oregon	http://www.ipmcenters.org/pmsp/pdf/PNWCaneberryPMSP.pdf

VIII. REQUEST THREE YEAR EXTENSION OF CYPRODINIL DATA EXCLUSIVE USE PERIOD

The information within this application provides sufficient evidence for the Administrator in consultation with the Secretary of Agriculture to determine that registration of cyprodinil for use on the minor uses basil, blueberries, broccoli, cabbage, chives, lychee, mustard greens, pistachio and raspberry satisfy the required qualifying criteria under FIFRA § 3(c)1)(F)(ii) to support an extension of the cyprodinil data exclusive use period. Based upon the information provided in this application Syngenta requests the Agency grant a 3-year extension of the cyprodinil exclusive use period for (1) all data submitted by Syngenta in support of the initial registration of cyprodinil on April 10, 1998; (2) data submitted as a condition of registration; and (3) data submitted to add a new use to the

registration and pertains solely to the new use. These data are identified within Appendix V.

We respectfully request that the exclusive use period for the data identified within Appendix V be extended for a total period of three years. This extension will revise the present expiration date of April 10, 2008 to April 10, 2011.

IX. Request for Meeting

Syngenta will formally request a meeting with the Agency to discuss this application under separate cover and address any questions the Agency may have associated with its content in the near future.

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Appendices

Appendix I – Copy of EPA publication titled Reduced Risk/Organophosphate Alternative Decisions for Conventional Pesticides last updated August 10, 2007
Appendix II – Notice of first product registration and stamped labels for Cyprodinil Technical, Switch 62.5WG and Vanguard WG Fungicide
Appendix III – 40CFR References (40CFR 180.532)
Appendix IV – A Notice of registration and EPA stamped label for Switch 62.5WG approved October 14, 2004 & Vanguard WG approved November 7, 2006
Appendix V - Data Matrices
Appendix VI – Copy of final printed label for Switch 62.5WG & Vanguard as sold currently

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