WSU Application Technology Research and Extension

Gwen Hoheisel Extension; Lav Khot Engineering; Michelle Moyer Horticulture
3 faculty, 6 students,
Washington collaborators:
UW, WSDA, manufacturers, industry

SOLUTIONS FOR THE PRESENT

EDUCATION ($20,000 in kind; Does not include WSDA salary)

WSDA and WSU Best Spray Practices Course
Bilingual, 4 times per year, hands-on

Task	% respondents	
	Before Training	After Training
Maintained sprayer parts	36-40	64-69
Used ceramic nozzles	54	92
Checked tractor speed	54	94
Monitored air direction	38	69
Reduced air volume	0	33
Used water sensitive paper to assess coverage	1	31

Online Course
4 weeks, focused on grape industry

SPRAYER EVALUATION ($400,000)

Apples, Blueberries, Grapes → Assessed coverage and in-field drift

- axial fan, Cannon sprayer, Gregoire, OnTarget, Quantum Mist
- Data incorporated into education

MECHANISTIC MODEL FOR AG DRIFT

($162,000 plus $370,000 cost share)

Data to model & validate new model to be used by EPA in risk assessment and labels

Florescent tracer used to measure drift up to 600'

Photo by TJ Mullinax, Good Fruit Grower

Revised 04/2019

SOLUTIONS FOR THE FUTURE

RETROFITTING EXISTING SPRAYERS

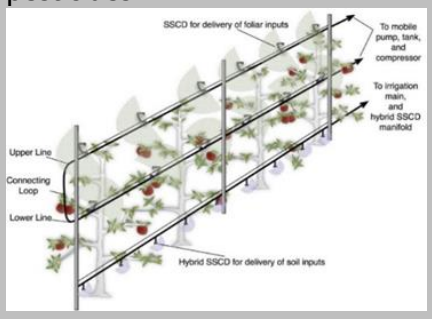
($50,000)

Laser Guided Variable Rate Technology – adaptable to existing sprayers and adjusts spray according to presence and canopy variability

ALTERNATIVE SPRAY SYSTEMS

SOLID SET CANOPY DELIVERY SYSTEM ($4.9 million)

Eliminates the worker exposure on a tractor, reduces spray time, utilizes optimal weather and low risk pesticides



Permanent spray system connected to the existing trellis

THERMOTHERAPY, OZONE, & UV SPRAYERS

($750,000)

Ozonated water spray technology, used in packing houses, as a possible alternative to high-risk pesticides

Alternative sprayers could improve efficacy of existing pesticides like plant and petroleum oil. Some like this UV spray use no chemicals

Photo by David Gadoury, Cornell AgriTech

DRONE TECHNOLOGY

Spray availability in difficult terrain and in surgical manner

SMART PATTERNATOR ($70,000)

Precisely assesses air and vertical spray patterns for potential use by manufacturers and researchers