

2008 PROGRESS REPORT: ORGANIC CROPPING RESEARCH FOR THE NORTHWEST

TITLE: Evaluation of seed treatments for organic vegetable production in the Pacific Northwest

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COOPERATORS: Lyndon Porter, Plant Pathologist, USDA ARS at WSU Prosser, IAREC; Carol Miles, Extension Horticulturist, WSU Mount Vernon NWREC; Alec McErlich, Small Planet Foods; Todd Crosby, Mercer Canyon Farms

DATE (period which report covers): 2008 (August – December)

KEYWORDS: vegetables, organic, seedling blight, damping-off, seed treatments, drench treatments, Pacific Northwest

ABSTRACT (Maximum of 250 words in length, written in non-scientist/layperson language, briefly summarizes your work to date): A PhD student, Ana Vida Alcala, was recruited in summer 2008, to work on this project for her PhD dissertation. Ana completed an MS degree in plant pathology at the University of the Philippines in Las Banos, after which she worked for the Philippines Rice Research Institute. Ana has research experience in biological control of diseases and insect pests, which will be valuable for her PhD dissertation. Ana's US student visa application was approved in late fall 2008, so she started her PhD program in January 2009 by enrolling in courses in Pullman. Ana is in Pullman all of spring semester, and will return to the NWREC in May 2009 for the field season. Ana is getting faculty together to serve on her PhD committee, and we are arranging a conference call to discuss primary issues, research needs/ideas, etc. with PNW vegetable stakeholders who have extensive experience in organic vegetable production, e.g., Alec McErlich and Todd Crosby.

OBJECTIVES: Continue research completed in 2007 by MS student, Jaime Cummings (funded by CSANR), on evaluating organic seed and drench treatments for efficacy against soilborne pathogens that cause damping-off and seedling blight of vegetables. The information generated by this proposed research is expected to contribute towards registration of several seed treatments that were in an experimental phase of development during Cummings' project and which showed potential for more effective management of soilborne damping-off pathogens compared with products currently available for organic production. Many of the companies that have been developing seed/drench treatments for organic production and that collaborated on Cummings' thesis project, have requested continued research to help provide objective evaluation and information needed for more effective disease management in organic vegetable production.

PROCEDURES: The research will be expanded to include vegetable crops grown in the Pacific Northwest in environments across the state that represent the diversity of organic production systems in the region. Field trials similar to those described by Cummings (2007) will be carried out:

- Carrot, onion, pea, and possibly sweet corn in the semi-arid, irrigated agricultural region of the Columbia Basin (grower cooperator = Mercer Canyon Farms, which has significant organic acreage of vegetables)
- Carrot, lettuce, and spinach in the maritime western Washington (at the WSU Mount Vernon NWREC, and with grower cooperator(s) such as Huber's Organic Produce).

Growers that produce vegetables organically/using sustainable production practices will be consulted for feedback on research needs based on their experience with seedling blights of vegetable crops and seed treatments they have evaluated. A selection of appropriate seed and drench treatments will be evaluated on each of the above crops in field sites representing the production environments. Trials will be planned in coordination with grower-collaborators to create conditions conducive for damping-off pathogens. If permitted, field sites may be inoculated with pathogen(s) to facilitate evaluation of the treatments.

PROGRESS TOWARDS OBJECTIVES: A PhD student, Ana Vida Alcala, has been recruited for this project. The student will need to complete classes on the WSU Pullman campus in spring and fall semesters of 2009, so limited field research is anticipated for summer of 2009, with the bulk of the field research completed in 2010-2011. Greenhouse and lab trials will also be carried out in 2009, as feasible for the student. Potential research topics for evaluation of combinations of seed and/or drench treatments against combinations of soilborne pathogens, and microbiological investigations into mechanisms of disease control or suppression under different environmental conditions for treatments that prove efficacious against one or more damping-off pathogens.

OUTPUTS (Publications including newsletter articles, workshops and meetings, presentations, web sites or pages, field days): None to date for this specific project.

IMPACT (In what way has your work influenced organic agricultural practices, economics/marketing and environmental stewardship): None to date for this specific project.

INSTITUTION: Washington State University

STATE: WA

FUNDING SOURCE(S) (list matching funds if applicable): WSU CSANR

FUNDING AMOUNT(S): \$40,000

ORGANIC RESEARCH LAND (indicate number of acres on all that apply): Not yet in process.

Station	___ non-organic	___ transitional	___ certified
On-farm	___ non-organic	___ transitional	___ certified

FARMER COOPERATOR(S): Number: 3

Name(s): Alec McErlich, Todd Crosby, Nash Huber