



PENNSYLVANIA VEGETABLE MARKETING & RESEARCH PROGRAM

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Pennsylvania Vegetable Final Research Grant Proposals for 2022

The Vegetable Marketing and Research Program Board and the Pennsylvania Vegetable Growers Association have approved funding for the following research proposals as listed below. The Vegetable Growers Association will be providing \$26,000 of the funding and the Vegetable Marketing and Research will provide \$16,823.

1. Impact of Management Practices on Soil Health Indicators in Conventional and Organic Vegetable Cropping Systems (multiyear- Year 3)

Dr. Gladis Zinati, Rodale Institute

\$5,000

- to assess soil chemical and biological properties in soil samples taken in 48 pots.
- to disseminate the results to growers using various educational venues. These activities include, but are not limited to, an annual field day, a web article posted on Rodale Institute's website, an article in a PVGA newsletter, and an online seminar in 2022.

2. Are Organic Herbicides Effective for Burndown Prior to Crop Establishment?

Dwight Lingenfelter and John Wallace, Penn State University

\$1,867

- to examine various OMRI approved herbicides to determine their effectiveness on burndown weed control.
- to evaluate these herbicides compared to competitive, non-OMRI approved products.

3. Potential Herbicide Programs to Control Problem Weeds in Pumpkin

Dwight Lingenfelter and John Wallace, Penn State University

\$1,869

- to examine various pre and post herbicide programs in pumpkin (i.e., novel concepts vs. standards) to determine their effectiveness on weed control.
- to evaluate these herbicide programs on pumpkin injury and yield impact.

4. Improving Onion Center Rot Management Through More Precise Topping at Harvest

Beth K. Gugino and Jennie D. Mazzone, Penn State University

\$3,000

- to develop a recommendation to help growers safeguard bulbs from bacterial disease through precision hand-topping at harvest.
- to develop a picture tool to help growers rapidly assess when to harvest based on disease severity and its proximity to the bulb.

5. Evaluating the Efficacy and Safety of Pyridate in Snap Beans

John Wallace and Dwight Lingenfelter, Penn State, University; Lynn Sosnoskie, Cornell University; Mark VanGessel, University of Delaware

\$3,570

- to evaluate the efficacy and safety of pyridate for commercial snap bean production.
- to evaluate two formulations, Tough EC (an emulsifiable concentrate) and Lentagran WP (a wettable powder).

6. In-Row Cultivation Using Camera Guidance Technology in Snap Bean

John Wallace and Tosh Mazzone, Penn State University

\$1,248

- to evaluate cultivation timing of in-row cultivation with finger-weeders and camera-based guidance to optimize weed control and minimize crop injury.

7. Assessing the Ability of Tomato Communities to Suppress Disease in a Transplant Setting

Kevin L. Hockett, Penn State University

\$8,350

- to passage a natural community for 8-10 transfers to select for bacterial spot suppression.
- to evaluate the ability of the disease suppressive community developed in objective 1 to suppress bacterial spot in a tomato transplant production setting.

8. Evaluation of Rootstock-Scion Interaction and Yield Performance in Fresh-Market Tomato Grown in High-Tunnel

Timothy Elkner, Andrew Blunk and Francesco Di Gioia, Penn State Extension and University

\$9,919

- to evaluate the performance of two fresh-market tomato varieties grafted onto four commercial rootstocks examining the rootstock-scion interaction effect on plant growth, nutrient uptake, yield, and fruit quality in a high tunnel under PA environmental conditions.

9. Keeping PA Vegetable Growers Profitable: Statewide Cultivar Trials

Elsa Sánchez, Robert Pollock, Timothy Elkner, Thomas Butzler, and Megan Chawner - Penn State University and Extension

\$20,000

- to evaluate early maturing, determinate, large, red, slicing tomatoes.

10. Breeding Processing Tomatoes for Production in PA

Majid R. Foolad, Penn State University

\$6,000

- to evaluate a total of 40 PROC tomato F₁ hybrids with EB resistance.
- to evaluate 56 PROC tomato F₁ hybrids with EB + LB resistance.
- to continue development and evaluation of elite inbred lines of PROC tomato with EB resistance.
- continue development and evaluation of elite inbred lines of PROC tomato with EB + LB resistance.
- to establish and continue a project to identify and map genes for bacterial canker resistance to be used for breeding purposes.

11. Breeding Fresh-Market Tomatoes for Production in PA

Majid R. Foolad, Penn State University

\$8,000

- to evaluate 95 FM large-size F₁ hybrids with EB resistance.
- to evaluate 77 FM large size F₁ hybrids with EB + LB resistance.
- to evaluate 90 FM grape tomato hybrids with EB and/or EB + FB resistance.

- to evaluate and develop elite large-size FM tomato breeding lines with EB resistance and other desirable characteristics.
- to evaluate and develop elite inbred lines of large-size FM tomato breeding lines with LB resistance and other desirable characteristics.
- to evaluate and develop elite inbred lines of FM grape tomatoes with various desirable characteristics.
- to establish and continue a project to identify and map genes for bacterial canker resistance to be used for breeding purposes.