

Sustainable Cranberry Production

Status: NIFA REVIEW

Project Director

Hilary Sandler

Organization Project Number

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Accession Number

7002085

Start & End Date

10/01/2020

Organization

University of Massachusetts

To Project / Program

"Sustainable Cranberry Production"

Primary Critical Issue

Sustainable Agriculture and Food Systems

Fiscal Year

2022

In 2-3 sentences, briefly describe the issue or problem that your project addresses.

Weed/IPM program.

We address new and emerging pest issues (e.g., yellow loosestrife, poverty grass, moss) by gathering data on occurrence in the industry and discovering details about the biology of these pests in the cranberry production systems. We develop use-pattern recommendations based on rigorous applied studies in the field and laboratory.

Entomology program.

We address new and emerging pest issues (e.g., vaccinium scale, golden casebearer, green spanworm, cranberry black bug) by gathering data on occurrence in the industry and discovering details about the biology of these pests in the cranberry production systems. We develop use-pattern recommendations based on rigorous applied studies in the field and laboratory.

All programs. We then disseminate this information to our stakeholder community (state, regional and national cranberry growers). In an iterative process, we assess our impact on growers' practices, develop research priorities to address current and future needs and design research to answer questions and obtain tools that help growers to manage problematic weeds, insects, and diseases.

Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.

Weed/IPM Program. We provided diagnostic services and recommendations so growers were able to apply the correct management option to the correct situation. We also continue to refine use patterns for herbicides to maximize control and minimize environmental impacts. We used data generated by our studies to obtain Special Local Needs (SLN) labels and Section 18 Emergency Exemption permits as needed. We continue to promote IPM and interregional collaborations. We interviewed with multiple media outlets regarding the impact of climate change on cranberry production. All of these efforts are critical to all of our stakeholders as we continue to provide effective pest management tools to the cranberry industry, which enables growers to sustain their economic viability.

We educated growers on resistance management in terms of herbicide rotation when controlling pests. We made more than 12 site visits to growers' farms and handled more than 70 calls from growers as well as numerous text conversations via cell phone. We published fact sheets on red sorrel and fluridone with an REEU Fellow.

Entomology program. We provided diagnostic services and recommendations, so growers were able to apply the correct management option to the correct situation. We also continue to refine use patterns for insecticides to maximize control and minimize environmental impacts. We used data generated by our studies to add FIFRA 2ee recommendations to the chart book for our growers and obtain labels and permits as needed. We continue to promote IPM and interregional collaborations. We interviewed with multiple media outlets regarding the impact of climate change on cranberry production. All of these efforts are critical to all of our stakeholders as we continue to provide effective pest

management tools to the cranberry industry, which enables growers to sustain their economic viability.

We educated growers on resistance management in terms of insecticide rotation when controlling pests. We made more than 85 site visits to growers' farms. We collected and inspected over 50 vine sample of vaccinium scale: assessing infestations and advising growers on proper management. Over a dozen site visits were made for new insects, golden casebearer and cranberry black bug. We handled 100s of calls and texts from growers through the challenging growing season. We published and updated fact sheets on vacinnium scale, golden casebearer and cranberry black bug.

Briefly describe how your target audience benefited from your project's activities.

Weed/IPM program. Cranberry growers managed outbreak populations of dodder, moss, and poverty grass.

Cranberry growers expanded their use of Zeus (herbicide) to use for moss control, a weed shown to have significant negative impact on cranberry growth and yield.

An Emergency Exemption was obtained for the use of Kerb (pronamide) for the control of dodder. We obtained a Special Local Needs renewal for the use of Devrinol (napropamide) on young plantings and expanded the use pattern to include established (older) plantings.

Entomology program. Cranberry growers managed outbreak populations of scale, casebearer, and spanworm.

We monitored cranberry growers new usage of Fanfare (bifenthrin insecticide) for cranberry weevil and green spanworm management. Efficacy proved to be excellent, even through cranberry chemigation systems. Much education spent warning of aquatic toxicity paid off with no adverse reports of trouble.

All Programs. Timely diagnostics and management guidelines were provided by Extension faculty and staff to cranberry growers.

We continued to provide high-quality virtual and in-person educational programs for our stakeholders. Growers are able to obtain recertification credits to maintain their pesticide applicators licenses through attendance at these meetings. We maintained critical connectivity with our stakeholders and provided them with letters, reports, diagnoses, and management guidelines that were immediately and positively impactful on their farms.

Briefly describe how the broader public benefited from your project's activities.

All programs.

Our activities support the Mission of the Cranberry Station, the Center for Agriculture, Food and the Environment and the Land Grant mission by maintaining and enhancing the economic viability of the Massachusetts Cranberry Industry through research and outreach and serving the public welfare by supporting economic development and the protection of the environment. The economic and environmental health of the cranberry industry has positive reverberations in the southeastern region of the Commonwealth and beyond.

Comments (optional)

The Weed Science/IPM, Entomology, Plant Pathology and Plant Physiology programs were impacted by the disruption caused by the renovation of our laboratory facilities and the construction of a new building. Access to materials and adequate work space was limited at best. Despite these constraints, we were able to serve our stakeholders and conduct most (but not all) of our planned experiments. Our ability to mentor undergraduate students was also hampered. We look forward to resuming "normal" functioning in 2023.

We disseminate results via workshops, bogside meetings, newsletters, IPM messages, one-on-one meetings, digital conversations, phone exchanges, websites, and digital repository downloads.

- Annual Meeting - Cranberry Management Update (Facilitated Group Meetings and Conferences) (2) - 368 Participants
- Bogside Workshops (Workshop series or educational course) (5) - 173 Participants
- Consultations and site visits to support pesticide stewardship and registration (Individual Consultations and Site Visits) (450) - 363 participants
- In-person Bogsides (2) - 54 Participants
- Virtual Bogsides (2) - 71 participants
- Cranberry Crop Summit (Workshop series or educational course) (1) - 45 Participants

- Cranberry diagnostic and management recommendation services (Diagnostic Services) (280)
- Cranberry Station Newsletter (Printed Material (newsletter, factsheet, field manual) (7) - 214 Participants
- Cranberry Station web site (Websites or Other Electronic Delivery) (1)
- Fact Sheets on Pest Management and/or Sustainable Cranberry Production (Direct - Other) (4)
- Pesticide Safety Workshop (Workshop series or educational course) (1) - 70 Participants
- Research field trials to support pesticide stewardship and registration (Demonstrations) (3)