

Project Title: Sustainable Cranberry Production

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Project Overview

The cranberry industry in Massachusetts faces many challenges. Growers struggle to remain economically competitive and environmentally sustainable. It is anticipated that the industry may lose some acreage due to attrition and that smaller growers may sell their land. As with all farmers, energy costs are rising quickly, impacting the bottom line. Growers must develop and adopt innovative technology to remain competitive. The additional pressure of marketing fruit for export (foreign) markets that mandate restrictive thresholds for pesticide residues present yet another challenge. They must understand the biology of cranberry pests to properly utilize new management tactics. Additionally, they must contend with increasing urban pressure on the farm's margin as many parties compete for resources. The goal of the UMass Extension Sustainable Cranberry Project is to provide cranberry growers with pertinent and timely information so they may sustain their operations in Southeastern Massachusetts.

Activity Summary - 2018

- Annual Meeting - Cranberry Management Update (1)
- Bogside Workshops (1)
- Pesticide Safety Meeting (1)
- Research Project in support of reduced-risk pesticide registration – IR4 Trial (1)
- Cranberry Station Newsletter (7)
- Cranberry Station web site (1)
- Summit Meeting at the Cranberry Station (1)
- Training sessions to provide WPS training for cranberry growers' employees.(4)

Total educational contacts

	Adult Contacts
In Person	375
Indirect Contacts (Print, Web, etc...)	9066

Narrative Summary and Impact

2018 was a challenging year for the Sustainable Cranberry Production team. We were down 2.5 FTE scientist positions for the reporting period and one faculty member was on sabbatical. We held a series of successful meetings that were well attended by our grower clientele. Specifically, 196 growers attended the Annual Management Update and 81 people attended a separate meeting on pesticide safety. We held one bogside workshop that was attended by 15 growers. We published 7 issues of the Cranberry Station newsletter, which was distributed to 244 recipients. Most subscribers are in Massachusetts, but 9 were national or international addresses; 52% receive the newsletter via email.

The UMass Cranberry Web site tallied (Google Analytics) 8,667 users (entrances) between October 1, 2017-September 30, 2018 (-4.6% from last year). We had 23,421 page views, which was 4.1% decrease from last year; we had 17,567 unique page views (-3.0%) on the site during that time. Visitors spent an average of 1:30 minutes on the site. The top 5 visited pages were: How Cranberries Grow, Cranberry Chart Book, Faculty/Staff page, IPM message alerts, and Frost Tolerance reports (same top 5 as 2017). Our home page was the primary way people entered our web site. From our top 10 pages: People spent just over 4 minutes on the 'about cranberries' page, BMP guidelines (2:55), chart book (2:52), nutrient management (2:26), faculty/staff (2:24), and frost tolerance (1:39).

We had one IR4 project (fungicide) in 2018. Our team supported the work of 1 graduate student. Our diagnostic lab processed 151 plant samples for virus detection in-house. We made 32 visits for insect, disease, and unidentified pest diagnostics, identified pests via microscopy (144 samples) and handled at least 85 phone calls related to IPM and bog issues. We published a fact sheet on grower feedback and resistance management (https://scholarworks.umass.edu/cranberry_outreach_resistance/2). The full suite of our Extension publications and presentations are posted on ScholarWorks (see metrics below). We provided four crop insurance letters, four Zone II consults, three letters for Good Agricultural Practices certification. We conducted 50 Pesticide Certification consultations (so growers could obtain their physical license from MDAR).

Project Summary-Impacts

Our 2018 meetings provided direct educational outreach to 292 attendees, and allowed 228 attendees to obtain 902 contact hours towards pesticide recertification. The information presented in our extension meetings is valuable for our stakeholders. Based on survey data (N=111 respondents from 196 attendees) from our January 2018 Update Management meeting (full-day meeting), 41 and 54 (fertilizer management), 42 and 60 (maximizing weed control), 32 and 63 (herbicide update), 38 and 60 (fruit rot and fungicides), 26 and 37 (irrigation and frost), 27 and 83 (invited speaker pathology), 16 and 69 (grower panel-hybrids), 11 and 77 (bogs into conservation), 29 and 51 (resistance management), 31 and 68 (MDAR web site, WPS), 26 and 64 (weevil, CFW and bees), 27 and 67 (scale false blossom and leafhopper) growers got information they will likely use on their farm and got new information, respectively. The relevant topics for the responses are in parenthesis.

Web access continues to be an excellent resource for our constituents and people interested in sustainable cranberry production. Many of our fact sheets, presentations, and publications are available on Scholarworks, a digital repository supported by UMass Libraries. Based on the metrics generated by BeePress (which supports Scholarworks for UMass), visitors to the Scholarworks site downloaded 1,047 copies of various sections the UMass Cranberry Station Chart Books (+5.5% from last year), 462 copies of the Cranberry Production CP-08 (Executive Summary and Full) Manuals (+65% from last year), 762 copies of BMPs (+13% from last year; IPM was downloaded most frequently, 351 times), 2,469 copies of our Extension PowerPoint presentations (+3.3% from last year; jar test for mixing pesticides was the

most popular with 540 downloads), and 685 fact sheets (no change from last year; Physiology of cranberry yield was the most popular with 213 downloads). We also had 260 downloads of various reports and surveys with the report on defining new weed management IPM techniques downloaded 33 times. We posted 55 new documents. Our new section that contains abstracts from the North America Cranberry Researchers and Extension Workers Conference had 270 downloads, with the talk on moss getting 33 downloads. We had 277 downloads of various cranberry-related dissertations with Flame Cultivation by Ghantous being downloaded 136 times. UMass Cranberry Station documents were downloaded by people from more 805 different institutions (Sogetel, USDA, and University of Wisconsin-Madison among the most frequent) and 136 different countries. The top three countries accessing our work through Scholarworks are the US, Canada, and China.

Collaborating Organizations

- **Cape Cod Cranberry Growers Association**
- **Cranberry Institute**