Vermont IPM Report 2016-2017

The Multidisciplinary Vermont Extension Implementation Program Addressing Stakeholder Priorities and Needs for 2014-2017

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EIP Project Areas: Agronomy, Greenhouse/Landscape, Apple/Grape, Communities/Master Gardener, Plant Diagnostics

Agronomy Accomplishments/Outputs

Agronomy Field Days

- Getting Started with Grains, Berlin, VT. June 21, 2016. 27 attendees.
- Annual Grain Research Tour, Alburgh, VT. June 28, 2016. 29 attendees.
- Organic Wheat Production and Processing, Quebec, Canada. July 13, 2016. 14 attendees.
- Annual Crops and Soils Field Day, Alburgh, VT. July 28, 2016. 185 attendees.
- Hopping and Milling, Northfield, MA. August 18, 2016. 53 attendees.
- Successfully Starting a Hop Yard, Starksboro, VT. September 1, 2016. 52 attendees.
- Growing Dry Beans in VT, Glover, VT. October 11, 2016. 28 attendees.

Agronomy Winter Conferences

- 8th Annual Hops Conference, Burlington, VT, February 25, 2017. 177 attendees + 19 in Live Broadcast.
- 13th Annual Grain Growers Conference-Grains in a Diversified Farming System, Essex, VT, March 23, 2017. 132 attendees + 17 in Live Broadcast.

Agronomy Web Resources

- 20 research reports on disease/insect/weed pest management on grains, hops, oilseeds from 2016 trials www.uvm.edu/extension/cropsoil/research
- 14 Hop Blog Posts http://blog.uvm.edu/hoppenin/
- 5 grains, beans, oilseeds pest management blog posts http://blog.uvm.edu/outcropn/
- 40 hops, grains, beans, oilseeds facebook posts https://www.facebook.com/uvmcropsoil/

Grain Disease Survey

- Scouted wheat in Alburgh, N. Troy, Glover, Shelburne, Bridport, Berlin, VT & Northfield, MA. Scouted spring barley in Essex, NY.
- Scouted dry beans in Alburgh, Glover, Cambridge, N. Ferrisburgh, Danby, VT.
- Scouted hops in Alburgh, VT, North Hero, Calais, N. Starksbroro, Ferrisburgh, Berlin, VT & Northfield, MA.
- Identified pathogens on diseased plants with the help of the UVM Plant Diagnostic Clinic.

Loose Smut Seed Lot Testing

- Four contaminated seed lots sent for testing using embryo count method.

Guides of Pests in New England for oilseeds, grains, hops

- Oilseed field guide to pests in the Northeast updated to include soybeans, soybean pests.
- Field guide for growing grains in the Northeast being updated to disease/insect pests.
- "What Hops in a Hop Yard?" hop arthropod pest field guide continues to be updated.
- "Northeast Dry Bean Production Guide" created, including dry bean disease/insect pests.

Impacts

Agronomy Field Days

- 100% learned new information; 90% intend to make a change based on what they learned.
- 67% improved grain quality and improved farm economics as a result of previous field days.

Agronomy Winter Conferences

- Annual Hops Conference:
    - 56% improved scouting skills, 67% reduced pest pressure, 71% improved pest identification skills, 63% implemented crowning to control downy mildew, 47% improved hop quality.
    - "I was very impressed with the conference. I got all the info I needed to get started."
    - Annual Grain Growers Conference:
        - 100% learned new information; 80% intend to implement a new practice.
        - 39% improved grain quality, 44% improved soil health, 33% improved weed control strategies.
        - "Updated research on crops. It was the best conference I have ever attended."

Grain Disease Survey

- Several grain and dry bean pests were identified during the 2016 growing season.
- All of the farms scouted found it useful and would like to continue scouting their fields in 2017. Scouted farms have minimized pesticide application or adopted new pest control strategies.
- Two farms unknowingly planted anthracnose-contaminated seed, leading to 80-100% loss. Pathogen was positively identified by the UVM Plant Diagnostic Clinic and the seed seller notified.
- While screening pods for anthracnose, another pathogen (Ascochyta) was detected.

Loose Smut Seed Lot Testing

- Only one of four contaminated lots tested positive, indicating better testing methods are needed.

Apple/Grape Accomplishments/Outputs

- 9,139 page views of UVM Fruit: Tree Fruit, June 2016-May 2017 http://www.uvm.edu/~fruit/?Page=treefruit/tf_home.html&SM=tf_submenu.html
- 156 email addresses subscribed to vtapplegrower@list.uvm.edu.
- 43 blog posts providing IPM guidance, promoting IPM tools, advertising IPM workshops/meetings.
- 2 blog posts on Cornell's Network for Environmental Weather Applications for disease management.
- 90 one-on-one consultations.
- 1 fact sheet http://www.uvm.edu/~fruit/treefruit/tf_horticulture/UVFRT005_NonChemWeedMgmt.pdf
- Annual revisions of the New England Tree Fruit Management Guide, released April 2017
- Session planning/IPM presentations at:

- VT Tree Fruit Growers Association annual meeting, Middlebury, VT, February 16, 2017 (Lepidopteran Complex; Fire Blight 101; Insect Pests; Modern Apple Scab). 65 attendees.
- Eastern NY Commercial Horticulture Program Champlain Valley Petal Fall Meeting, Peru, NY, May 23, 2017. (Petal Fall Management). 40 attendees.
- U.S. Association of Cider Makers Conference: Advanced Cider Orchard Production Workshop, Chicago, IL, February 9, 2017. (Reduced Pruning Inputs for Dessert Apples grown for Cider Making). 100 attendees

Apple IPM Guideline Assessment

- 3 selected advisory stakeholders responded to the online assessment survey, obtained initial scores. Responses reviewed with participants during one-on one consultations; IPM practices identified to adopt.
- The same 3 stakeholders received a follow-up online assessment surveys to track adopted IPM practices.

Grape Extension, Outreach, Education

- 2,367 page views of UVM Fruit: Grapes, June 2016-May 2017 http://www.uvm.edu/~fruit/?Page=grapes/gr_home.html&SM=gr_submenu.html
- 269 email addresses subscribed to vermontgrape@list.uvm.edu.
- 22 blog posts providing IPM guidance, promoting IPM tools, advertising IPM workshops/meetings.
- 1 blog post on Cornell's Network for Environmental Weather Applications for disease management.
- 23 one-on-one consultations.
- 2 American Society of Horticultural Science HortIM fact sheets http://hortim.ashsmedia.org/items/show/48, http://hortim.ashsmedia.org/items/show/49
- Session planning/IPM presentations at: NY & VT Winter Grape School, Lake George, NY, March 9, 2017. (Cold Climate Grapes Disease Management, Minimal Spray Program). 44 attendees.

Grape IPM Guideline Assessment

- 3 selected advisory stakeholders responded to the online assessment survey, obtained initial scores. Responses reviewed with participants during one-on one consultations; IPM practices identified to adopt.
- The same 3 stakeholders received a follow-up online assessment surveys to track adopted IPM practices.

Impacts

Apple Extension, Outreach, Education

- 2017 Vermont Tree Fruit Growers Association annual meeting
  - 90-100% of participants indicated moderate/considerable knowledge following presentations on Lepidopteran Complex (26% increase), Modern Apple Scab (8% increase), Fire Blight 101 (36% increase), Insect Pests (20% increase)
  - "Great discussions of current issues for our orchards." (watching fire blight conditions/timing treatment; cleaning out/mowing leaves for apple scab; rotating fungicide groups; resistance management)
  - "Glad there were topics that were applicable to all growers."
- 2016 Vermont Tree Fruit Growers Association annual meeting impacts
  - 44% of participants changed use of IPM (increased scouting, NEWA weather models); most often to improve confidence in making pest management decisions and reduce use of broad spectrum pesticides.

    - 20% changed Apple Replant Disease management practices.
    - Brown Marmorated Stink Bug is not an issue in the region.

Apple IPM Guideline Assessment

- 100% of advisory stakeholders selected to participate responded to initial online assessment survey.

Grape Extension, Outreach, Education

- NY & VT Winter Grape School, Lake George, NY, March 9, 2017
    - 95% rating by participants for value of topic (Cold Climate Grapes Disease Management, Minimal Spray Program)
    - 52% referenced IPM topics (disease identification, fungicide resistance management, spray timing) as important take-home messages
    - 72% indicated they will make changes (the remaining 28% indicated 'maybe'); 55% referenced improved attention to disease management

Grape IPM Guideline Assessment

100% of advisory stakeholders selected to participate responded to initial online assessment survey

Greenhouse/IPM Accomplishments/Outputs

IPM First for Greenhouse Ornamentals

- 9 new operations enrolled. 3 specifically requested to join. 17 past operations continue to receive guidance.
- Over 70 site visits at 22 different farms, reaching 37 growers in 11 of the 14 VT counties.
- 1 national conference presentation on marigolds to manage thrips in greenhouse ornamentals. 100 attendees.
- 5 presentations on naturally-occurring beneficials in plant-mediated IPM systems. >300 attendees.
- 2 trainings on natural enemy/pest identification for an IPM First site staff, Extension specialists.
- 1 workshop on habitat plant systems/aphid IPM in greenhouse/high tunnel. 40 attendees.
- Participation on technical school advisory committee developing IPM curriculum for greenhouse production courses.

Tri-State Greenhouse IPM Workshops

- Planning/presentations at 20th annual event held in ME, NH, VT. Cooperating regional specialists presented moisture management, disease drought practices, fungus gnat/moisture pest/shorefly/natural enemy identification, moisture meters, live specimen quality assurance identification. >160 attendees.
- 3 hand-outs on identification of naturally-occurring beneficials, using habitat plants in greenhouses.

Green Industry IPM ambassadors

- 10 sites received support (4 newly enrolled) to expand IPM adoption and serve as Green Industry ambassadors. >25 site visits.
- 1 demonstration on natural enemies/pests on habitat plantings. 6 students, 2 educators.
- Customer education display produced about providing habitat for natural enemies/pests of landscape.

Regional IPM Workshops for Landscapers

- 1 conference on establishment of natural enemies on habitat plantings in the landscape.

- 3 presentations on habitat plantings for natural enemies at Tri-State Greenhouse IPM Workshops.
- 3 presentations on best management practices for nurseries reducing movement of invasive earthworms.

Development of Landscape IPM webpage

- Website: http://www.uvm.edu/~entlab/Landscape%20IPM/LandscapeIPM.html
- 5,300 hits on greenhouse/high tunnel/landscape IPM webpages

Impacts

IPM First for Greenhouse Ornamentals

- 78% use plant-mediated IPM (an increase from 67% with minimal prior knowledge)
- 100% use biological controls (an increase from 56-78% with little prior knowledge)
- 89% now regularly scout for pests.
- 71% claim lack of knowledge about IPM implementation limits use; 43% lack of time, 29% lack of money.
- One participating site reduced chemical pesticide use over 50% in one season by incorporating routine scouting and rotation of chemistries (had previously relied solely on prophylactic chemical applications).
- 83% of greenhouse operations enrolled in past years continue to use plant-mediated IPM systems.
- Past participants host biological control tours for growers and the public.

Tri-State Greenhouse IPM Workshops

- 86% rating by participants in usefulness for solving pest problems. 89% learned new techniques they intend to use this year, 66% had used biological control in the past, 57% had used plant-mediated IPM systems.
- 54% had never attended a past workshop, demonstrating that new growers are being reached.
- Past workshop participants: 86% increased biological controls, 71% increased plant-mediated IPM systems, 86% decreased chemical pesticides, 95% improved scouting program, 93% improved pest identification skills.

Communities/Master Gardener Accomplishments/Outputs

Master Gardener Course IPM Lectures

- 107 Master Gardeners completed the 2016 Master Gardener Course.
- 564 Master Gardener volunteers logged 11,086 hours making 8,701 contacts with the public about home gardening, pesticide reduction, water quality, sustainable landscapes, local food production.

Master Gardener Helpline

- 1,029 home gardener questions answered through the Helpline, June 2016 -May 2017.

Master Gardener Advanced Training IPM Webinars

- 3 Advanced Training Webinars offered to active Master Gardeners: Tomato IPM, Grubs in Turf, weed management.

Impacts

Master Gardener Course IPM Lectures

- 46% of 2017 MG Course students did not know what IPM was before the course; 98% intended to adopt a new IPM practice.
- 89% of 2016 MG Course students adopted an IPM practice as a result of the course.

Master Gardener Helpline

- 88% of 2016-2017 MG Helpline clients indicated the information they received helped them use IPM (cultural practices first, least toxic pesticides as a last resort) to manage their pest problem; 68% were able to reduce the use of pesticides.
- 92% of 2015 MG Helpline clients chose an IPM practice, 73% reduced their use of a pesticide as a result of diagnosis.

Plant Diagnostic Clinic Accomplishments/Outputs

Plant Diagnostic Clinic Samples

- 600 disease, insect and weed samples diagnosed and with IPM information provided to commercial growers, Master Gardeners, general public who submitted disease/insect/weed samples.

Plant Diagnostic Clinic Extension Presentations/Workshops

- IPM presentations at 21 meetings/workshops >1,000 attendees.
- Across the Fence Extension Television programs-Six on IPM.
- Plant Disease and IPM lecture at Master Gardener Course. 107 students.

Contribution to Newsletters/Publications

- Bi-weekly VT Vegetable and Berry Newsletter column on current/emerging disease/insects/weeds and IPM. 750 New England growers.
- Contribution of Vermont data for the weekly UMASS Veg Notes
- Quarterly column for *The Dirt* on disease and pests for the Vermont Nursery and Landscape Association
- Contributor to the New England Vegetable and Small Fruit IPM Guidelines

Impacts

Plant Diagnostic Clinic disease/insect/weed diagnostics

- 93% of PDC clients indicated their pest issue was identified.
- 92% of PDC clients chose an IPM practice; 73% reduced their use of a pesticide as a result of diagnosis.

Targeted stakeholder groups

- 92% of targeted stakeholders indicated they had adopted an IPM practice as a result of diagnosis.
- Grape researchers and growers had 'considerable' knowledge gain of grape pests from a NY/VT grape meeting; an increase from 'minimal' knowledge indicated before the meeting.

Plant Diagnostic Clinic Extension presentations/workshops

- 72% of field/forage pest specialists indicated increased IPM knowledge as a result of presentations at a 2017 meeting; 54% adopted a new IPM practice as a result of presentations at a 2016 meeting.