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Sweet Corn Integrated Pest Management: An Extension-Farmer Partnership

https://extension.umaine.edu/ipm/sweet-corn/

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Maine's Sweet Corn Industry

- Not a high value crop (net profit/acre)
- About ½ of retail vegetable acreage (6,000 A)
- Essential for farm stands to attract customers
- 300+ farms, mostly small plantings
- Most sold fresh retail, some local wholesale
- Customer concerns about pesticides
- 3 major insect pests; only 1 can overwinter

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Objectives

1. Increased grower awareness of pests
2. Minimize pesticide use
3. Reduce production costs
4. Improve crop quality
5. Increase consumer awareness

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Integrated Pest Management

1. Monitoring of pest populations
2. Action thresholds to determine control timing
3. Alternative management techniques utilized

Program Activities

<u>IPM Scouting</u>

- 2-4 scouts trained each season
- Monitor 18-24 volunteer farms
- Train farmers in IPM practices
- Distribute timely pest data to growers

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European Corn Borer *Ostrinia nubilalis*

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Monitoring: Field Scouting

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Monitoring: Pheromone Traps

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Alternative Management

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Corn Earworm *Helicoverpa zea*

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Monitoring: Pheromone Traps

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Monitoring: Pheromone Traps

Moths/week	Moths/night	Spray interval
0.0-1.4	0.0-0.2	No spray
1.4-3.5	0.2-0.5	Every 6 days
3.5-7.0	0.5-1.0	Every 5 days
7.0-91.0	1.0-13.0	Every 4 days
>91.0	>13	Every 3 days

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Alternative Management

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Fall Armyworm *Spodoptera frugiperda*

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Monitoring: Field Scouting

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Monitoring: Pheromone Traps

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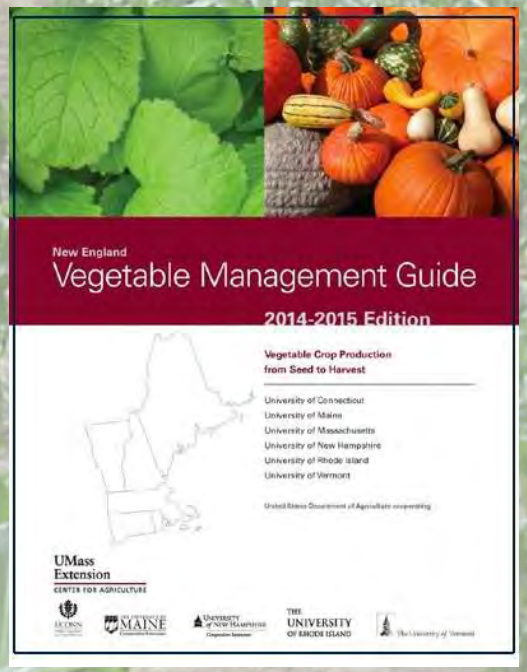
Monitoring: Other Pests

Teaching Methods

- Winter meetings
- Summer demonstration meetings
- One on one farmer training
- Web page/blog
- Weekly newsletter
- Management guide



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Results

- Over 100 growers attend meetings annually
- Over 150 growers receive the newsletter
- Online newsletter/blog received over 2200 views
- Numerous presentations regarding the program nationally and internationally

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Highmoor Farm Field Day
Wednesday, July 26, 2017
Save the date!

Sweet Corn IPM Newsletter

No. 3 July 7, 2017

CORN EARWORM ACTIVE IN SILKING CORN FIELDS

European Corn Borer Feeding Increasing in Pre-Tassel Fields

SITUATION

Early corn, planted under plastic mulch or row covers is coming into silk this week, while early corn planted without plastic is now in pre-tassel. Warmer growing conditions have kept corn growth at a brisk pace, but has allowed increased insect activity in some fields. Sprays have been recommended for both European corn borer and corn earworm this week.

European corn borer: Moth captures were lower in most locations this week, but larval feeding activity was found in nearly all the fields we scouted. Most fields were still under the recommended spray thresholds of 30% of whorl-stage plants showing feeding injury or 15% of pre-tassel plants. Fields in Bowdoinham, Cape Elizabeth and Wells were over threshold for either whorl or pre-tassel corn, so sprays were recommended. In silking corn, the sprays may be based on the number of corn borer moths caught in pheromone traps to prevent moths from laying eggs on the flag leaves of the ears, which could lead to larvae infesting the ears. One early silking field in Cape Elizabeth was over the 5-moth threshold, but the field was also on a spray interval for corn earworm, so no additional sprays should be needed.

Corn earworm: We continue to catch moths at some, but not all locations, and in relatively low numbers. The weather has been conducive to more moths flying northward, and egg laying at night, so growers with early corn should be on the alert to protect any silking fields if moths are found in the area. A 6-day spray interval for corn earworm was recommended for early silking fields in Wells and Dayton this week. A 5-day spray interval was recommended for silking fields in Cape Elizabeth and Lewiston. When no silking corn is available, corn earworm larvae may chew large, ragged holes in the leaves, similar to fall armyworm. This should be counted in field scouting for European corn borer and fall armyworm.

Fall armyworm: No moths have been captured in our pheromone traps this week, and no feeding damage has been reported. We do expect that moths will be arriving soon, as they typically follow corn earworm into Maine by a few days to a few weeks.

Spotted wing drosophila: Flies have been caught in other New England states this week, and Dr. Frank Drummond, University of Maine Entomologist, reports flies found in Stockton Springs. We have found one female SWD from a trap in Buxton. Growers with ripening blueberries or raspberries should be on the alert for flies or larvae in the fruit.

Squash vine borer moths were caught in pheromone traps in Wells, Biddeford, Oxford and New Gloucester this week. Only the Wells site was above the 5 moths per week spray threshold, and a spray was recommended, but the captures in other locations indicate that this pest is now threatening summer squash, winter squash and pumpkins in Maine fields. Growers with squash in southern Maine should be on the lookout for vine borer symptoms and protect squash plants if moths or damage are seen. See the ***2016-2017 New England Vegetable Management Guide*** for control options.

Sincerely,

David T. Handley

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Vegetable & Small Fruit Specialist

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Impacts

- 60-90% reduced pesticide sprays (3+ per season)
- Farmers save ~ $180 per acre in control costs
- Marketable ear quantity and quality improved
- Increased profitability $10-$1000 per acre
- Improved customer relationships

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Future Directions

- Encourage more farmer-run monitoring
- Develop IPM strategies for new pests
- Adapt current strategies to new technology
- Evaluate and promote alternative strategies
- Adopt new communication technologies

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