



2006 VEGETABLE IPM PRIORITIES

Research and Implementation Priorities

(Rank: H=high, M=medium, L=low)

Multiple Crop Priorities

Implementation Priorities:

- H Alternative weed management techniques such as interseeding, new cultivation tactics and banding of herbicides
- H Demonstrate new biological and biocompatible control measures, including practices for organic systems, that look promising in replicated experiments.
- H Demonstrate maximized effectiveness of pesticides by improving application equipment.
- H Seed treatments to control seed maggots, flea beetles, other insects and diseases
- M Demonstrate to growers how to effectively make use of the previous season's weed population information when planning rotations, tillage and herbicide options for the following season weed control program.
- M Evaluate IPM programs developed in other states. Refine and adapt them for NY.

Research Priorities:

- H Use of mulches, including no-till and killed, rotational strategies and other alternative practices for improved soil quality and weed control in vegetable cropping situations.
- H Maximize effectiveness of pesticides through evaluation of application equipment.
- H Develop decision systems for diseases and insect pests that are based on weather data and that could be used with the currently owned electronic weather sensors.
- H Preventative measures for disease control such as rotation, cultural practices and avoidance.
- H Optimize pesticide evaluations by timing treatments based on action thresholds.
- H Management of root rot and nematode diseases
- H Improve our understanding of which are the most important natural enemies and how insecticides may affect them. The objective is to devise strategies to conserve the most important natural enemies through careful selection of any needed pesticide applications.
- H Evaluate new biological and biocompatible control measures including practices for organic systems
- H Improve flea beetle management tactics, especially for organic systems.
- H Seed treatments to control seed maggots, flea beetles, other insects and diseases
- M Slug biology and management.
- M Influence of environmental factors on the efficacy of aerial sprays for insect control

Crucifers (cabbage, cauliflower, broccoli)

Implementation Priorities:

- H Demonstration and evaluation of biological control (including natural enemies and pathogens) and assessment of the effects of presently used insecticides on natural enemies.
- H Black rot management information dissemination

Research Priorities:

- H Evaluation of biological control (including natural enemies and pathogens) of Lepidopteran pests, aphids, and maggots - especially for those insects where insecticide resistance is a concern. Also applies to aphid pests.
- H Development of alternative control tactics for root maggots including use of pathogens, host plant resistance, seed coating and adult trapping.
- H Disease control in storage cabbage
- H Breed for and evaluate varieties for pest (insects and disease) resistance alone or in combination with other bio-based practices.
- H Improve management strategies for thrips in cabbage and work with growers and companies to incorporate such into commercial production.
- H Identification of black rot inoculum sources

Cucurbits

Implementation Priorities:

- H Continue with cucurbit IPM implementation including recommendations for resistant varieties.
- H Assess the extent of resistance to QoI fungicides
- H Demonstrate some documented strategies for Phytophthora blight management

Research Priorities:

- H Continue interdisciplinary research on diseases and insect pests including evaluation of resistant varieties and biocompatible pesticides.
- H Develop strategies for managing Phytophthora Blight
- H Develop strategies for managing Plectosporium (including varietal resistance)
- M Determine strategies for control of bacterial diseases (bacterial wilt, leaf spot and angular leaf spot) of cucurbits.

Onions

Implementation Priorities:

- H Demonstrations of rotations for pest control such as weeds and onion maggot
- H Continuation of implementation projects to increase adoption of IPM techniques including but not limited to the use of the onion thrips threshold and the use of Blight Alert.
- H Demonstrate an efficient program for detecting thrips susceptibility to commonly used insecticides.
- H Demonstrate management of black rot (*Aspergillus niger*) and neck rot (*Botrytis allii*) from field to storage

Research Priorities:

- H Investigate biology of black rot (*Aspergillus niger*) and neck rot (*Botrytis allii*) from field to storage
- H Evaluate onion varieties for resistance to onion maggot, Botrytis leaf blight, onion thrips and other pests.
- H see multicrop seed treatments priority
- M Investigate ecology of onion thrips, onion maggot and their natural enemies for improved management.

Potatoes

Implementation Priorities:

- H Screen varieties for leafhopper resistance

H Demonstrate cultural practices such as rotation, cull management, scouting seed tubers as late blight management tactics

Research Priorities:

H Evaluation of integrated management of silver scurf, including seed treatments, storage treatments, rotation and disease suppressing cover crops, fungicides, and other options.

H Necrotic virus management strategies in potatoes

H Tuber blight management strategies including organic strategies (seedpiece treatments and post harvest strategies)

M Breeding potatoes for resistance to multiple pests including Colorado potato beetle, potato leafhopper, aphids, late blight, early blight, Verticillium wilt, leafroll and other diseases.

Snap beans

Implementation Priorities:

H With the loss of Ronilan, demonstrate alternatives for white and gray molds and make better use of forecasting for fungicide applications for pod molds.

Research Priorities:

H Alternatives to fungicide applications for white and gray molds.

H Development of control tactics for seed maggot control in snap and dry beans, including seed treatments

H Improved management tactics for insect pests such as European corn borer.

H Bean virus biology and management

H Leaf hopper control for organic production

H Elucidation of etiology and epidemiology of Plectosporium pod russet

Sweet Corn

Implementation Priorities:

H Demonstrate alternative control tactics for worm pests including biologicals and biorational insecticides and compare their impact on important natural enemies.

M Demonstrate management tactics for corn flea beetle, the vector of Stewart's wilt.

Research Priorities:

H see multicrop weed management

H Development of action thresholds for rust on late-planted and highly susceptible varieties.

H Refinement of fresh market sweet corn IPM protocols, including relationship between trap counts and field infestations for corn started under plastic

M Breeding for resistance to multiple pests including "worms" and diseases.

M Screening of existing varieties for resistance and evaluate Bt corn lines for horticultural performance and pest control under NY conditions.

M Corn leaf aphid management through varietal resistance, threshold development, optimal insecticide use and evaluation and conservation of natural enemies.

Tomato

Implementation Priorities:

H Demonstrate bacterial disease management strategies.

M Demonstration/research projects using TOMCAST forecasting system

Research Priorities:

- H Investigate control of bacterial diseases - speck, spot, and canker.
- H Determine the integration of newer fungicides (non-strobilurin) for foliar disease (early and late blight) using TOMCAST.