

Priorities developed by the fruit IPM working group, posted November 7, 2003

All fruit

Extension

- Education for growers using GIS as a tool for pest management.
- Education regarding implementation of IPM programs and potential economic benefits.
- Education regarding monitoring techniques, economic thresholds, etc.
- Education regarding use of limited-spectrum insecticides or alternative management strategies such as mating disruption as replacements for broad-spectrum materials and potential secondary effects.
- Increase amount of money available for Extension outreach programs
- Promote educational support to independent crop consultants/IPM scouts on relevant IPM issues
- Aiding in the transition to web-based information delivery
- Education for growers to recognize new and/or emerging pests and associated damage.
- Pocket pest ID guides
- Resources for developing educational materials
- Sprayer and irrigation pesticide application resources (evaluations, calibration, best use patterns, etc.)
- Support for determining research and extension priorities for the NE region fruit crops (grower surveys)

Research

- Improved monitoring and management of root diseases caused by *Phytophthora* spp.
- Effective monitoring strategies for key pests in which techniques currently do not exist.
- Increase available research dollars
- Management strategies for vertebrate pests
- Continued R/D for use of parasitic nematodes for control of root feeding insects. An analyses of efficacy and economics are needed, especially for new species with special characteristics. For example *S. kraussei* is being sold as being especially effective in cold soils, and *S. scarabaei* may have broad effectiveness against both scarab and root weevil larvae.
- Improved monitoring and management techniques for tarnished plant bug
- Develop treatment thresholds for many key pests of tree fruit and small fruit.
- Improved management techniques for vertebrate pests, especially birds and deer.
- Research pertaining to biology, ecology and behavior of new and emerging pests such as *Halyomorpha halys*, the brown marmorated stink bug

Organic

Research

- Management strategies for key pests that are acceptable for organic production.

Perennial

Research

- Long-term weed management practices for perennial crops, reducing reliance on fumigation and herbicides
- Non-target effects of imidacloprid use in perennial fruit crops

Small fruit

All small fruit

Extension

- Annual regional meeting of small fruit pest management and production specialists
- Directory of small fruit pest management resources, regional and national
- Regionalized small fruit pest management guide and web page

Research

- Evaluation of organic (OMRI approved) pest management methods in small fruits

Berry

Unspecified

- Biodegradable mulches during establishment
- Bird management
- Blackberry winter injury management.
- berry cranberry fruit worm & others?
- berry winter injury; Phomopsis
- Currant aphid management.
- Development and testing of softer materials and non-pesticide options
- Imported currant worm risk management.
- Sap beetle in strawberry
- Small fruit plant protection - updates
- Small fruit weed management
- Strawberry: herbicides and decline
- Strawberry: herbicides and soil health
- Sap beetle
- Weed control: herbicide availability

- Beetle spp. as root feeders
- Black vine weevil in strawberry
- Imported currant worm management.
- Organic production methods
- Organic production methods all berries
- Plastic mulch disposal issues
- Raspberry crown borer; borers
- Slugs in strawberries
- Strawberry decline & replant
- Two-spotted spider mites in strawberry
- Weeds as alternate hosts: TPB, nema's
- Crown borer in brambles
- Development and testing of replacement materials
- TPB in strawberry & brambles

Extension

- Outreach to Garden Centers, small scale growers, and homeowners on
- Programming for adaptation and expanded adoption of IPM methods for

Research

- Blueberry Scorch virus - geographical distribution, identification of genetic strains, development of control/containment strategies, development of resistant varieties.
- Evaluating IPM-compatible pest management strategies for managing blueberry maggot to replace the current strategy of calendar spraying

Bramble

Extension

- Expanded programming in pest management related to brambles grown in
- Demonstration grants showing feasibility of IPM in brambles

Cranberry

Research

- Determining ecosystem-wide changes in pest, natural enemy, and other beneficial insect populations as a result of implementing new selective reduced-risk insecticides in cranberries
- Pheromone trap captures as a predictor of larval populations in the following year for the cranberry blossomworm

Grape

Extension

- Expanded programming in viticulture in Coastal New England

Research

- Black Goo/Esca in Grapes - geographical distribution, identification of genetic strains, development of control/containment strategies

Unspecified

- Development and testing of softer materials and non-pesticide options
- ERM management, products, timing
- Grape berry moth management.
- Powdery mildew management
- Powdery mildew management strategies
- Soil health
- Vertebrate management: birds and deer
- Assessment of miticide resistance in ERM
- Downy mildew management.
- ERM and factors that flare mites
- Fungicide resistance
- Harmonia risks
- Organic vs. conventional vs. biodynamic
- Phytotoxicity of phosphorous acid in tank mixes
- Powdery mildew alternative materials
- Low input management of Phomopsis
- Rigorous investigation of compost teas and other soft materials for IPM

Ribes

Research

- White Pine Blister Rust in Ribes - geographical distribution in the wild (on Ribes and Pinus) and testing commercial cultivars for immunity and/or resistance to local strains of the fungus in order to determine if modifications to restrictive regulations which still exist in some states can be made without undue risk to the forest ecology and/or lumber industry.

Strawberry

Extension

- Expanded programming in pest management related to annual strawberry

Research

- Anthracnose in strawberries - one of the most serious limitations to the adoption of annual strawberry production is the pervasive distribution of anthracnose in the production of rooted runners or plugs for this system (fall planting). We need to have a reliable way to either exclude this disease from the plug production system or to clean it up before plugs are distributed. More generally, there is a need for improved disease management in small fruit nurseries, as propagation material (field grown strawberry crowns) is a significant source of inoculum for nematodes and pathogens. Growers go to great pains to establish new fields, to rotate crops, or to fumigate in order to eliminate these pests, so shipping plants with pathogens defeats these efforts.
- Improved monitoring and management techniques for root weevils in strawberries, brambles, blueberries
- Development of strawberry varieties for the Northeast with enhanced tolerance/resistance to soil-dwelling pests and diseases.

Tree fruit

All tree fruit

Unspecified

- Late season OFM & CM without OP's
- Resistance management strategies for powdery mildew
- Development and testing of softer materials and non-pesticide options
- Fire blight management - shoot blight
- Fire blight management. - alternative materials
- IPM - cost reduction
- New chemical registrations and uses
- Organic production methods
- Resistance management strategies for insects
- Groundwater-risky products: replacement or other options
- Herbicide escapes: pigweed, ragweed
- Organic production methods all tree fruit
- Plant bug & Mullein bug management.
- Reduction of OP's and replacements
- TPB obstacle for T pyri conservation
- Weed management in orchards (all tree fruit)
- Develop Integrated Production Management - IFP
- Dogwood borer management
- Efficacy of "soft" chemical programs
- Evaluation of sprayers and coverage issues.
- Integrated control of mites
- Pesticide drift onto neighbors' property
- Postharvest decay management and associated mycotoxins
- Protection of predatory mites from EBDC fungicide programs in wet years
- Replacements for OP's, carbamates, pyrethroids

- Stink bug management & trap crops
- X-disease management.
- Abandoned orchards as reservoirs for pests

Apple

Unspecified

- Apple scab management in wet years
- OBLR management
- OBLR-materials, timing, coverage
- Interaction between herbicide phytotoxicity, winter injury & other factors contributing to decline in high density apple plantings.
- Resistance monitoring for fungicides in apples
- Scab-resistance screening
- Apple scab ascospore maturity
- OBLR & Honeycrisp, (Ginger Gold?)
- Resistance management strategies for apple scab

Peach

Unspecified

- Mating disruption for OFM in peaches

Pear

Unspecified

- *Fabraea* leaf spot management. on pear

Pome

Unspecified

- Fire blight management using blossom blight models
- Fire blight-shoot blight phase
- Mating disruption for OFM in apples and pears

Stone fruit

Unspecified

- Bacterial canker on stone fruits
- Southwest injury on stonefruits