

IPM Needs and Priorities for Vegetable Crops and Strawberries In the Northeast Region 2009

Updated February 2009 at the meeting of the Northeast Vegetable IPM Working Group

Part I – General needs and priorities

- 1) Expand adoption of IPM through addressing the unique needs of all types of vegetable growers including:**
 - a) Small and large farms
 - b) Isolated operations and those in more concentrated crop production areas
 - c) Growers with a few crops as well as highly diversified farms
 - d) Farms that are certified organic.
- 2) Centralize vegetable IPM through the Northeast IPM Center database.**
- 3) Increase support for IPM in the market place.**
 - a) Develop ways that farmers using IPM can be recognized in the marketplace for their environmental stewardship practices.
 - b) Improve consumer understanding of IPM.
 - c) Partner with other organizations including non-governmental organizations, state governments, private sector and others to achieve this goal.
- 4) Develop updated vegetable IPM Guidelines or checklists.**
 - a) Develop and promote an understanding, among growers and the public, that IPM is based in integrated crop management including cultural practices and soil stewardship.
 - b) Work at the state, regional and national level to develop current, crop-specific definitions of IPM practices that are both flexible and meaningful.
- 5) Conduct research on how to promote plant health and suppress insect, disease and weed problems through cultural and biological production practices.**
 - a) These may include enhancing plant capacity to resist infection or injury, encouraging conservation of beneficial organisms, using crop rotations, green manures, compost and fallow periods, or improving soil health, to enhance overall crop and whole farm health. Investigate interactions of soil health with pest prevention and suppression.
 - b) Demonstrate efficacy of research outcomes through on-farm trials.
 - c) Develop recommendations and disseminate this information in usable form for farmers.
- 6) Support training and communication across the region for agricultural professionals in vegetable IPM.**

- 7) **Identify and conduct research regarding new and re-emerging pests of vegetable crops.**
 - a) Ensure that the database is user-friendly, comprehensive and updated.
 - b) Advertise and promote the availability of it, to encourage its broad use as an information resource in the Northeast.
- 8) **Improve and enhance monitoring and modeling infrastructure for determining and forecasting insect, disease, weed and other pest conditions.**
 - a) Build regional coordination to improve delivery of forecasting information to farmers. Include regional maps of pest pressure, phenology and forecasts, made publicly available through the Internet and other media.
 - b) Build upon existing forecasting programs such as Melcast in PA, NEWA (Network for Environment & Weather Awareness) in NY, Potato late blight in DE/NJ, Pestwatch in PA.

Part II: Priority Pests

The following list of priority pests were identified by the Vegetable IPM Working Group in 2003, 2004, and 2005, and 2007 and were reviewed and updated in 2009. The Working Group decided to drop the ranking scale that was included in this list in the past. All pests listed here are considered a priority for vegetable crops within the Northeast region. Some may have broader geographic range, involve more serious crop losses, or be cause for higher pesticide use at the present time, but all are serious and in need of further research and extension activities in some or all of the Northeastern states.

DISEASES

Phytophthora of all the cucurbits, beans and solanaceous crops and strawberries
 Downy mildew in vegetable crops, including cucurbits, beans, basil and Brassicas
 Striped cucumber beetle/bacterial wilt
 Powdery mildew, Plectosporium and other disease management on cucurbits
 Fungal pathogens on solanaceous crops
 Bacterial pathogens on tomatoes and peppers
 Potato pathogens (such as powdery scab, potato wart virus, and pink rot)
 Sweet corn leaf diseases
 Insect vectored viruses in vegetable crops
 White mold (Sclerotinia) in vegetable crops
 Diseases of vegetables grown in high tunnels
 Soil borne diseases of vegetables
 Strawberry diseases (especially root disease)
 Plant parasitic nematodes
 Onion diseases

INSECTS

Lepidopteran complex in sweet corn
 European corn borer and other Lepidoptera in potato, beans, leafy greens, peppers
 Integration of the transgenic sweet corn with overall pest management
 Sap beetle on corn

Mites, especially in strawberry and tomato (both tunnel and field)
Potato leafhopper in beans, strawberries and potatoes, esp. in organic systems
Wireworm on potatoes
Tarnished plant bug in beans, tomatoes, eggplant, pepper, strawberry
Stink bug on tomato, pepper and bean
Flea beetle in Brassicas and eggplant
Aphid control on leafy vegetables
Squash bug
Striped cucumber beetle/bacterial wilt esp. on organic farms

WEEDS

Increase post-emergence options, both chemical and cultural
Efficient or new technology for non-chemical and cultural weed control (for example, new guidance information (GPS) for mechanical weed control)
Weed control and resistance management in no-till
Solanaceous weeds in solanaceous crops
Canadian thistle and other perennial weeds
Galinsoga
Control of annual weeds in sweet corn

VERTEBRATES

Deer
Birds
Other vertebrates (including raccoons, skunks, mice, moles/voles, bears)

GENERAL

Pollinator decline (native pollinators as well as domestic honeybees)
Management of pesticide resistance
Better understanding of crop rotations
Improvement of soil health
Role of transgenic crops in IPM