Livestock and Field Crop IPM Research and Extension Priorities
(Modified 1/30/14)

I. Implementation (High Priority)
• provide thorough documentation of program impacts
• coordinated involvement of CCE / IPM staff, faculty, and multipliers, where appropriate
• linkage to ongoing educational and research programs
• document increased IPM competence of individual growers, consultants, and agribusiness personnel
• document location-specific economic and environmental impacts of critical biological, cultural, or least toxic IPM methods in side-by-side comparison with conventional practice
• document increased IPM competence of individual growers, consultants, and agribusiness personnel
• evaluate scouting and integrated management strategies for new or emerging pests (e.g. WBCW, Bt tolerant rootworm, etc.) and/or commodities (e.g., small grains, soybean, biofuel feedstocks, stored commodities, livestock) on multiple farms
• IPM Educational Outreach to enhance knowledge, use and adoption of IPM approaches to better managing pests of field crop and livestock in New York.
• Development of an Online IPM educational programs to better meet the needs of NY producers

II. Multidimensional Demonstrations (High Priority)
• improve grower awareness and confidence in comprehensive IPM strategies (cultural, biological, least toxic/reduced pesticide/ and/or organic) that minimize impact of all major pests in production system while optimizing net profitability and environmental impact
• strong linkage to ongoing research and educational programs including integrated management of:
  • flies and external parasites of dairy cattle and poultry
  • weeds, insects, and diseases of corn-based cash crop rotations
  • weeds, insects, and diseases of corn/alfalfa-based dairy rotations

Commodity/pest priorities are listed below based on current or anticipated widespread application of pesticides against these targets and / or potential economic losses associated with insect, disease, weed and vertebrate pests.

Field Crops:

Alfalfa (& Grass Mixtures) IPM
• potato leafhopper and alfalfa weevil
• annual and perennial broadleaf and grass weeds (including herbicide resistant species)
• currently under-managed diseases (leaf blights, root and crown rots, brown root rot)
• determine the value (disease control, yield and economic return) of foliar fungicides
• alfalfa snout beetle
• clover root curculio/Fusarium complex
• leaf & stem blight complex (especially spring black stem & leaf spot and Leptosphaerulina leaf spot)
• determine the need, value and potential impacts of fungicide treatments to alfalfa and other forages
• Sclerotinia crown and stem rot
• brown root rot of alfalfa
• Fusarium wilt of birdsfoot trefoil
• fundamental pest survey and impact assessment of forage grass foliar diseases and insect pests.

**Field Corn IPM**
• pesticide resistance management strategies against weed, disease and insect pests of field corn including resistance to genetically engineered plant-incorporated protectants
• annual and perennial broadleaf and grass weeds (including herbicide resistant species)
• foliar disease issues in field corn (northern corn leaf blight and gray leaf spot)
• determine the value (disease control, yield and economic return) of foliar fungicides
• evaluation of risk potential and impacts of new invasive or exotic pests such as western bean cutworm
• slug issues in field corn
• evaluation of potential pest risks associated with use of cover crops and green manures
• Research on organic weed control methods
• European corn borer, armyworm, cutworm, and wireworm
• seedling diseases in stand establishment
• leaf blight diseases (northern leaf blight, gray leaf spot, anthracnose, eyespot, and northern leaf spot)
• stalk rot diseases (anthracnose and Gibberella stalk rots)
• toxigenic molds in grain and silage
• insecticide seed treatments and seed and root feeding insect control
• Education on resistance management for both Corn Rootworm insecticidal seed treatments and Bt transgenic corn for CRW.
• Education on the importance of selecting corn hybrids and soybean varieties with disease resistance in order to help alleviate disease issues with the increase in conservation/zone tillage systems.

**Oat IPM**
• fundamental pest survey and assessment
• assessment of current status of cereal leaf beetle and it’s natural enemies

**Pastures IPM**
• fundamental insect, disease, weed, and vertebrate pest survey and assessment

**Soybean IPM**
• determine the value (disease control, yield and economic return) of foliar fungicides
• integrated soybean aphid management
• evaluation of alternative chemical, cultural, and biocontrol methods for management of white mold
• weed control methods including those appropriate for organic soybeans
• virus diseases (especially soybean vein necrosis and thrips vectors)
• fundamental pest survey and assessment
• varietal and cultural management of Sclerotinia stem rot and Phytophthora rot.
• varietal and cultural management of Soybean vein necrosis virus
• Seed treatments for insect and disease management, slug management, glyphosate resistance management
• Education on the importance of selecting corn hybrids and soybean varieties with disease resistance in order to help alleviate disease issues with the increase in conservation/zone tillage systems.

Stored Commodity IPM
• fundamental pest survey and assessment of pests affecting stored grains and silage
• innovative pest control methods for stored commodities

Switchgrass and other Bioenergy Feedstocks IPM
• Evaluate potential resistance in varieties or use of polyculture for management of prevalent diseases and insect pests of perennial grasses
• switchgrass diseases (smut, rust, leaf blights)
• Weed management in the establishment of perennial grasses

Wheat IPM
• foliar fungal disease complex of wheat (Stagonospora nodorum blotch, Septoria tritici blotch, tan spot, powdery mildew, leaf rust, stripe rust)
• determine the value (disease control, yield and economic return) of foliar fungicides applied at different growth stages
• integrated management of Fusarium head blight to reduce levels of deoxynivalenol
• survey of corn and other commodities in NYS for different mycotoxins and genetic variability (for toxin production) in populations of mycotoxigenic fungi
• virus diseases (yellow dwarf, aphid vectors, wheat spindle streak mosaic, soilborne wheat mosaic)
• cereal leaf beetle of wheat and oats
• varietal resistance to soilborne viruses in winter wheat
• develop / evaluate management strategies for stripe rust of wheat
• pest survey for wheat soilborne mosaic virus
• development of an IPM resource for malting barley production
• Armyworm management
• Education on the use of fungicides for control of Fusarium Head Blight and foliar diseases in Wheat

Livestock:
Dairy Cattle IPM
- fly pests affecting animals in barns (house and stable) or on pasture (face and horn)
- external parasites (cattle lice and mange mites)
- research on organically approved methods for control of dairy nuisance and biting fly pests
- cattle grubs, other arthropod pests and poisonous/noxious plants affecting cattle on pasture
- fly pests affecting animals on pasture (horse and deer flies)
- research to enhance management of pasture fly pests such as natural enemies, dung beetles and traps

Poultry IPM
- flies, external parasites, and other arthropod pests affecting poultry
- insect pests destructive to poultry housing structures
- vertebrate (bird, rodent) management in/ around poultry facilities

Vertebrate IPM
- fundamental pest survey and assessment
- integrated management to minimize impact of white tail deer on forages
- integrated management to minimize impact of birds (and other mammals crows, turkeys, etc.) on grain crops (small grains, corn)
- vertebrate (bird, rodent) management in/ around dairy facilities
- vertebrate (bird, rodent) management in/ around stored grain facilities

Other:
- Better understanding of relevant impacts of climate change affecting key pests of livestock and field crops and their management in NY
- Threat to IPM principles from misuse of new technologies (stacked trait corn, herbicide resistance): Programs have been effectively promoting IPM principals from some time but a renewed focus on these topics in educational programs and materials. Continued research on BMP’s for utilizing and preserving pest management tools.

NYS IPM Program
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