



On February 26-27, 2003 the Livestock and Field Crops working group met in State College, Pennsylvania to create a list of prioritized needs for commodities within the the livestock and field crop settings. Members of this group and their affiliations are listed at their web site. To start the process, each member wrote a list of IPM needs for the industry within the Northeast from their own perspective. These were then grouped and all the members voted on which needs were most important. The results are listed below according to priority with the first section rating highest. The detailed comments within each section are not prioritized. Currently a survey is being drafted and will be distributed to growers, consultants, and extension personnel to create a more specific list of pest problems and their importance for this group.

### **Field Crop Priorities** (highest priority first)

#### **IPM Educational Programming and Resource Development.**

- Continuous updates of written and on-line pest control recommendations and legal usage of pest control tools.
- Provide additional and/or more in-depth workshops for IPM, particularly those that are based on case-studies.
- Find how growers/producers want to receive pest management information.
- Provide educational programs for use of web-based pest management tools i.e. real time pest prediction models.
- Pest ID aides and resources for the practitioner (insects, disease, weeds and vertebrates).
- Education focused on specific weeds identified by producers.

#### **Evaluate Cultural Control Practices and Develop Information Systems on Insect, Weed and Disease Management Especially Pertaining to Cover Crops, Tillage Systems, and Rotation.**

- Interaction of tillage, cover crops and crop rotation on weed management.
- Effects of zone till, reduced tillage, and cover crops on pest populations.
- Use of cover crops to suppress weeds in new seeding.
- Use of conservation tillage.

## **Develop Business Management Plans and Strategies to Strengthen Existing and Encourage New Independent IPM Crop Advisory Enterprises.**

- Enhance the business management skills and training opportunities for IPM crop advisory services.
- Work to explore incentives and education on available support systems for IPM professionals.

## **Research and Development of Pest Management Strategies for Locally and Regionally Critical Pests of Field Crops in the Northeast, Including Efforts Centered on Pest Biology and Ecology.**

- Slug control in high residue environments.
- Corn rootworm management.
- Aphids as vectors of diseases in small grains.
- Dectes stem borer.
- Soybean Cyst Nematode resistance and control strategies.
- Spider mite management in soybeans and field corn.
- New pest control strategies on grass and legume hay particularly winter grain mite, green bug aphid, cereal rust mite, and white grub.
- Alfalfa weevil control (see below in bio control).
- Specifically need biology and ecology of weeds.
- Herbicide rotational strategies e.g. field crop to vegetables.
- Develop non-chemical and limited chemical control methods that interface with residue requirements.
- Canada thistle management.
- Perennial weed management.
- Crop competition from morninglory

## **Continue Research on GMOs and their Impact on Consumers, (humans, and animals), Non-target and Beneficial Organisms.**

### **Organic Transition Methods.**

- Evaluate organic transition systems.
- Information and demonstration on organic weed control
- Investigate alternative pest management systems for small versus large growers.

### **Management of Vertebrate Pests in Field Crops.**

- Ground hogs and deer in soybeans.
- Discourage vertebrate damage in soybeans with GMOs.
- General bird and deer damage.

### **Pesticide Resistance Management for Disease, Insect, and Weeds.**

- Disease resistance management especially in soybeans and field crops (S. Conn Leaf Blight, N. Conn Leaf Blight, Grey Leaf Spot)

### **Keep Current on Key Pest Problems in the Field.**

- Use pest surveys to ID current or emerging issues especially regarding invasive and exotic pests.
- Use grower surveys to ID what pest management practices are being currently used.

### **Improve Pest Scouting, Monitoring, and Prediction especially for Major Field Crops for Pests (insects, weeds, and diseases).**

- Fine tune existing thresholds.
- Tie thresholds to decision-making framework.
- Develop real-time pest prediction models with availability to clientele.
- Identify weather variables that influence disease and insect occurrence.
- Methods for documenting pests using new technologies such as GPS, GIS.

### **Biological Control Methods for Insects, Disease, and Weeds.**

- Use beneficial and sacrificial plants as insect attractants.
- Biological control options for key pests such as corn root worm, wheat diseases.
- Alfalfa weevil bio control.

### **Use of Traditional Breeding for Resistance to Pests (insect, disease, weed) in Field Crops.**

### **Alternative Pest Control on Grass and Legume Hay (includes insect, disease, weed, and vertebrate).**

### **Demonstration of New Technologies.**

- In weed control.

### **Economic Evaluation of Pest Management Tactics.**

- Include environmental inputs in the economic evaluation of different pest management approaches.

### **Dissemination of Results of Research and Projects on Alternative Weed Management.**

- Improving alternative weed control strategies in field crops.

- Information on alternative weed control e.g. cover crops, cultivation, rotary hoe, etc.

**Bridge Sharing of Information between University, Non-profit, and Private Sources(e.g. PASA, PSU, Rodale Institute).**

**Support Curriculum Development for Primary and Secondary Education Programs**

**Identify or Develop Appropriate Mycotoxin Pest Management Recommendations and Resources**

**Non-pesticide Alternatives in Field Crop Pest Management.**

- Investigate the use of non-pesticide alternatives and pest management tactics.

**Alternative Natural and Man-made Chemistry to Use as Pest Management Tools.**

**Study of Non-agricultural Land on Reservoir for Insects and Invasive Weeds.**

**Relationship of Fertility to Pest Management.**

**Livestock Priorities** (highest priority first)

**Develop educational programs to train stakeholders (growers, practitioners, veterinarians, etc) on livestock IPM issues and practices.**

- Produce information technology materials for IPM
- Education on bio security practices
- Provide information on the impacts of pests on livestock

**Develop new integrated management of key pests of livestock (poultry, dairy, beef and swine) on pastures, especially:**

- Stable fly breeding and migration in pasture systems.
- Fly control methods for pasture and feedlot situations.

**Improve biological control of pests affecting livestock and poultry in confined and pasture settings.**

- Find impacts of new, selective insecticides on beneficials.
- Research biological methods of fly control.

- Improve management of pests and natural enemies of pests in poultry houses.
- Evaluate new predators for use in fly control in poultry, dairy and beef operations.
- Look at use of parasites as a control tactic in hi-rise poultry houses.

**Find new fly management strategies for confined livestock and poultry systems.**

- Manage pests that move offsite such as house flies and litter beetles.
- Research pests affecting human health
- Look into integrated management of key pests of livestock in and around facilities.

**Investigate the influence of outdoor access on poultry health (climate, behavior, "wild" transmission)**

**Explore fly and beetle management strategies at the ag/urban interface.**

- Flies
- Darkling beetles

**Develop fly control methods for manure spread fields in livestock and poultry operations.**

- Consider nutrient management systems and their impact on fly control.

**Identify potential mosquito breeding sites on farms.**

- Quantify the percentage of mosquito breeding that occurs in old tires on the farm.
- Look at link between mosquito breeding sites on farms and the spread of West Nile virus.
- Study mosquito transmission of equine diseases.

**Create quick tests to detect pesticide resistance and improve resistance management programs for arthropod pests of livestock and poultry.**

**Improve amount and scope of vertebrate pest management for livestock operations especially for birds and rodents.**

- Use of bird control to avoid the spread of disease in livestock and poultry
- Manage starling and black bird populations in and around farm buildings.

**Research, evaluation, and development of alternative control methods for lice, mites and flies**

- Find effects and efficacy of "natural" materials and control methods.
- Research alternative controls such as traps, cultural controls, exclusion, sanitation, biological, mechanical

**Find alternate cultural controls for management of fly and beetle populations in poultry and livestock operations.**

- Develop mechanical tactics for fly control in hi-rise poultry houses.

**Look into use of pasture rotations to minimize parasite loads in sheep and goats.**

**Develop alternative management strategies for horse flies and other biting flies.**

**Identify effects of animal housing density on pest problems in livestock and poultry.**

**Investigate techniques of manure management to minimize fly and other pest production e.g. composting, manure drying.**

- Find impact of poultry manure management practices on pest populations
- Use manure composting to reduce fly populations.
- Try carcass composting to reduce fly populations.

**Determine stakeholder needs and preferences for delivery of IPM education**

- Enhance livestock IPM outreach and training for growers, practitioners, veterinarians, and others in the industry.