New York State Integrated Pest Management Program | Cornell Cooperative Extension

Elements of IPM for Field Corn in New York State

MAJOR PESTS

Insects	Diseases	Weeds
black cutworm	anthracnose	annual broadleaves
brown marmorated stink bug	common rust	annual grasses
common armyworm	common smut	herbicide resistant broadleaves
corn ear worms	ear rots (Gibberella, Fusarium, Diplodia, Cladosporium, Penicillium)	nutsedge
corn flea beetles	eyespot	perennials
European corn borer	gray leaf spot	horsenettle
fall armyworm	maize dwarf mosaic	
hop vine borer	northern leaf blight	
Japanese beetle	northern leaf spot	
maize billbug	seed rots, seedling blights	
northern corn rootworm	stalk rots (anthracnose, Fusarium, Gibberella)	
seed corn maggot	Stewart's leaf blight and wilt	
slugs		
stalk borers: common, potato stem, hop vine		
two spotted spider mites		
western bean cutworm		
western corn rootworm		
wireworm		
white grub		

Preplanting

Activity	Priority	Points	Acreage Goal	Grower Points
Conduct soil test every three years.	H	15	75%	
Follow soil test recommendations when making fertilizer applications	H	15	75%	
Review weed maps of fields to choose appropriate weed control strategies.	M	10	50%	
Maintain and review field history records annually (Cornell Cropware or other crop records keeping system is recommended).	H	15	75%	
Use at least one reduced tillage practice: no till, zone till or reduced till.	L	5	30%	

Preplanting, continued

Activity	Priority	Points	Acreage Goal	Grower Points
Calibrate sprayer once a year or custom hire applications.	M	10	---	
Crop Rotation: Rotate fields every year	H	15	75%	
Every 2 years		10	75%	
Every 3 years		5	75%	
(Avoids disease, insect pest and weed issues)				
Consideration of hybrid variety for weed suppression and herbicide tolerance.	L	5	30%	
Maintain and establish flowering plants in hedgerows for pollinators and beneficial organisms. Avoid removing hedgerows.	Bonus	5		
TOTAL		105		

Planting

Activity	Priority	Points	Acreage Goal	Grower Points
Use certified seed	H	15	75%	
Use hybrids tolerant or resistant to diseases and insect pests in your area	H	15	75%	
Plant when soil temperatures reach 50F degrees	M	10	50%	
Plant seed 1 ½ to 2 inches deep (this helps avoid birds feeding on newly planted seed)	M	10	50%	
Reduce weed seed and disease spread by cleaning tillage, planting and sprayer equipment between fields.	L	5	20%	
Use seed pre-treated with a fungicide/insecticide.	H	15	75%	
Use different mode of actions on seed treatments from year to year to aviod resistance issue with insect pests	H	15	75%	
Use bee friendly planting technology (seed lubricant that does not create dust and direct blowers toward the soil surface).	M	10	50%	
Use pre and post herbicides with multiple modes of action with each year to prevent resistant weeds.	H	15	75%	
Use Environmental Impact Quotient (EIQ) or Windows Pesticide Screening Tool (Win PST) to help select a more environmentally friendly pesticide when needed.	H	15	75%	
Use cultivation like tine weeding, rotary hoeing or in-row cultivation to reduce herbicide use.	M	10	25%	
TOTAL		135		

Post-Emergence

Activity	Priority	Points	Acreage Goal	Grower Points
Use the Illinois Soil Nitrogen Test (ISNT) and Corn Stalk Nitrate Test (CSNT) (CSNT on second year corn and beyond) or Adapt-N (nitrogen prediction model to determine in season nitrogen needs) http://adapt-n.cals.cornell.edu to determine nitrogen needs.	M	10	50%	
Make a written (or update) weed map of corn fields to use for evaluating current year's weed control.	H	15	75%	
Scout every 7-10 days as recommended for seasonal insect, weed, and diseases pests.	H	15	75%	
Use recommended economic or action thresholds for making management decisions.	H	15	75%	
Time post emergence application of herbicide before the V3 to V4 stage of corn growth.	M	10	50%	
Use scouting to determine the risk of disease and whether a fungicide is needed.	H	15	75%	
Keep records of pest management practices.	H	15	75%	
Calculate pest degree days for black cutworm, armyworm, seed corn maggot, western bean cutworm and other insect pests when you start scouting. You can use the NEWA Degree Day Calculator	L	5	---	
TOTAL		100		

Post-Harvest

Activity	Priority	Points	Acreage Goal	Grower Points
Survey fields and update weed maps to use when planning for next year.	H	15	75%	
Record all pest related issues and management actions from the current growing season	H	15	75%	
Establish a cover crop for weed suppression, erosion protection, and to scavenge nitrogen	H	15	50%	
TOTAL		45		

Calculate Total Points Earned - 80% Needed to Qualify for Certification

Section	Available Points	Grower Total
Preplanting	105	
Planting	135	
Post-Emergence	100	
Post-Harvest	45	
TOTAL 80% = 308	385	

To Learn More

Specific information about the use of these IPM elements can be found in the following publications:

1. NYS IPM Weekly Field Crops Pest Report published during the growing season, http://blogs.cornell.edu/ipmwpr.
2. NYS IPM Livestock and Field Crops Program, https://nysipm.cornell.edu/agriculture/livestock-and-field-crops.
3. Cornell Guide for Integrated Field Crop Management, http://store.cornell.edu/c-875-guidelines.aspx.
4. Cornell Cropware or other crop record keeping system, http://www.farminfotech.com/cropware.htm.
5. Cornell Cooperative Extension Field Crop Meetings when offered.

IPM Options for Managing Specific Field Corn Pests

The management techniques listed below offer varying degrees of control for pests listed.

For more information, consult the Cornell Guide for Integrated Field Crop Management.

Wheat Pests	Planting Date	Resistant or Crop Varieties	Seed Treatment Pesticides	Pesticide	Field Sanitation	Crop Rotation	Biological Control
weeds	√	√		√		√	
brown marmorated stink bug				√			
common armyworm		√	√	√	√		√
European Corn Borer		√		√	√	√	√
cutworm		√	√	√	√		√
fall armyworm		√	√	√	√		√
northern corn rootworm		√	√	√		√	
seed corn maggot	√		√			√	
slugs	√			√	√	√	
stalk borers			√			√	
western bean cutworm		√		√		√	
western corn rootworm		√	√	√		√	
wireworm			√	√	√	√	
anthracnose		√		√	√	√	
northern leaf spot		√		√	√	√	
ear molds		√		√	√	√	
eyespot		√		√	√	√	
gray leaf spot		√		√	√	√	
northern corn leaf blight		√		√	√	√	
common rust	√	√		√			
seed rots, seedling blights	√				√	√	
smut		√			√	√	
stalk rots		√				√	
Stewart's wilt		√					