COLE CROP IPM PROTOCOL
for
PRINCE EDWARD ISLAND

Integrated Pest Management (IPM):

A knowledge-based, decision-making process that uses all available techniques (Chemical, Cultural, and Biological) to suppress pests in an effective, economical, and environmentally sound manner.

This Protocol is designed to assist growers in determining what level of IPM they are currently practicing. It is designed to be used on a field by field basis so if you are using it to assess your 'whole farm' - you should answer the questions with respect to practices that you are using on the majority (>50%) of your acreage.

Pre & Planting Level IPM Decisions

What is your current crop rotation? (Check one only)

3-year	___3 points	
4-year	___5 points	☐
5-year	___8 points	

Soil and Water Management Level IPM Decisions

Do you: (check all that apply)

Soil test for fertility/nutrient levels	___4 points	
Soil test for pH and OM levels	___4 points	
Credit N for Manure/Compost or plow down crops	___4 points	
Do you add Manure/Compost or other OM to build your soil	___4 points	☐
Split your applications of Nitrogen over the growing season	___4 points	
Nutrient Management Plan implemented on your farm	***___5 points***	

What soil conservation practices do you use on this field? (Check all that apply)

Plant a winter cover crop or spread hay mulch (1.5 T/ac) on fields that require a winter cover.	___5 points	
Apply hay mulch across sloped areas of the field	___2 points	☐
Practice residue management	___4 points	
Leave a grassed headland on lower end of field if rows are running up and down the slope	___5 points	
Use of other soil conservation measures (terracing, strip cropping etc...)	***___5 points***	

Scouting and IPM

What method of scouting do you most commonly use? (Check one only)

Informal observations during routine farming operations	___1 points	
Observations based on what was happening on the edge of the field.	___2 point	☐
Crop Scouts focused mainly on potential hot spots or where there is a history of problems in the past.	___5 points	
Crop scouts followed specific patterns through the field (field borders and interior)**.**	___7 points	

Whose scouting data did you primarily use to make management decisions for this field? (Check one only)

Independent crop consultants	___5 points	
IPM trained Farm Employee/Owner	___6 points	

How many scouting trips were made during growing season in this field? (Check only one)

Once every two weeks	___2 points	
Once per week	___5 points	
More than once per week if pest outbreak occurs	___*7 points*	

Why did you scout? (Check all that apply)

To determine when levels of pests in a field reach threshold levels and to reduce environmental impact by using less pesticide.	___4 points	
To check on effectiveness of a pest control measure?	___2 points	
In response to a local or recent pest report you heard or read about?	___2 points	
To monitor areas of the fields where you knew pests were already a problem.	___2 points	

Which of the following best represents how you or your farm manager kept track of the scouting information collected on this field? (Check one)

No written or electronic records of scouting data were kept	___0 points	
Written records kept in a file	___1 point	
Written records for each field and consecutive years kept together to track pest pressure over time for this field	___2 points	

Weed IPM Decisions

When treating weed problems in this field do you (check all that apply) :

Keep records of previous weed problems and control in this field	___3 points	
Apply herbicides and cultivate to control weeds	___2 points	
Manage problem weeds in rotational crops	___3 points	
Use mechanical tillage only (ie. Reigi Weeder, Einbock Tine, Lely)	___*5 points*	
Clean all equipment when moving between fields to prevent weed spread	___*3 points*	

Insect IPM Decisions

Cabbage Root Maggot (CRM)

To prevent and monitor CRM populations do you: (check all that apply)

Do you try to rotate your fields to provide spatial separation from last years fields.	___*5 points*	
Do you Scout CRM densities once per week using regionally accepted scouting pattern and threshold levels	___3 points	

Do you control CRM using: (check one only)

Direct Seeding:

-Granular Insecticide in-furrow	___1 point
-Granular Insecticide in-furrow (only if corresponding with CRM generation)	___3 points
-Soil Drench after Planting	___5 points

Transplants:

-Soil Drench after Planting	___3 points
-Transplant Water Treatment	___5 points

Lepidoptera Complex (DBM, CL, and ICW), and other foliar feeding insects (flea beetles, tarnished plant bug and thrips)

To monitor Lepidoptera and other foliar pests populations do you:

Do you Scout densities once per week using regionally accepted scouting pattern and threshold levels (CLE's or % infested) ___3 points

Do you control lepidopteras and foliar pests using: (check one only)

High Hazard Insecticide	___0 points
Moderate Hazard Insecticide	___2 points
Low Hazard Insecticide	___5 points
Promote population of beneficial insects	___*7 points*

Do you use any of the following cultural methods to control lepidopteras and prevent resistance: (check all that apply).

Field borders are planted to trap crop to attract DBM (Collards)	___*5 points*
Use of a floating rowcover to exclude pests from the crop	___*5 points*
Do you manage insecticide resistance by rotating chemical groups	___3 points

Disease IPM Decisions

Do you use any of the following sanitation techniques to prevent disease spread on your farm? (Check all that apply).

Use only certified seed	___3 points
Use disease tolerant varieties whenever possible	___3 points
Use crop rotation to control certain diseases (ie. clubroot)	___3 points

To prevent disease infection of your field do you: (check all that apply)

Time fungicides according to Scouting Data/Weather Conditions	___4 points	☐
Scout fields for diseases on a regular basis	___3 points	

If Black Rot was found in the field would you:

Isolate field and disinfect all equipment	___3points	☐

Farm Management IPM Decisions

How often do you calibrate your spray equipment: (check one only)

All sprayers are calibrated at the start of the season	___3 points	
Re-calibrate midseason	___4 points	☐
Confirm that the appropriate rate has been applied through the use of a sprayer monitor.	***___5 points***	

Do you maximize sprayer efficiency by: (check all that apply)

Adjust sprayer variables (nozzles, pressure, boom height, water volume, etc...) to ensure proper coverage through out the growing season.	___4 points	☐
Using sprayers with new technology (air assist, electrostatic etc...) to ensure proper canopy coverage.	***___3 points***	

Do you keep: (check all that apply)

Records of cultivar and planting date for each field	___3 points	
Records of all weekly field monitoring/spray applications	___3 points	☐
Records of the effectiveness of the control measures for each field	***___3 points***	

Do you get involved in Research and Continuing Education: (check all that apply)

Do owners and employees receive safety training?	___3 points	
Involved in demonstration/research plots to test emerging and innovative farming techniques	___5 points	☐
Attend information sessions or field tours etc... to keep up to date	___3 points	
Do you leave buffer zones on field edges near watercourses	___3 points	
Are you involved in an 'on-farm' food safety program	***___3 points***	
Any areas on farm left as Conservation areas (ie. Ducks Unlimited, Island Nature Trust, etc...)	***___3 points***	

Harvest and Storage level IPM Decisions

During harvest do you: (check all that apply)
Evaluate all fields for potential harvest or storage disease problems ___3 points
Harvest during proper weather conditions ___2 points

During storage do you: (check all that apply)
Disinfect storage area prior to storage ___2 points
Inspect and clean bins prior to storage ___2 points
Monitor storage conditions and adjust if necessary ___2 points

SCORING - The protocol is based on a total value of 160 points (not including bonus points - in italics). Count up your total number of points obtained and use the scale below to determine where you fit in the IPM Continuum.

No IPM	Emerging	Basic	Established	Advanced	Optimal
<60%	60-75%	75-85%	85-95%	95-100%	>100%

< 96 = No IPM
97-120 = Emerging IPM
121-137 = Basic IPM
138-153 = Established IPM
154-160 = Advanced IPM
> 160 = Optimal IPM

Cole Crop - Registered Insecticides
Toxicity List for IPM Protocol

LOW	***MODERATE***	***HIGH***
Spinosad	Carbaryl	Azinphos methyl
Bt	Cypermethrin	Chlorpyrifos
	Deltamethrin	Endosulfan
	Cyhalothrin-lambda	Parathion
	Permethrin	Naled
	Methomyl	Methamidophos
	Dimethoate	Acephate