

RUTABAGA 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

___3 points

Transplants:

-Soil Drench after Planting

___3 points

-Transplant Water Treatment

___5 points

Season long control: (check all that apply)

-Soil Drench when scouting thresholds indicate

___3 points

-Rotation of control products to avoid resistance

___3 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)

Very High Hazard Insecticide

___0 points

Moderate Hazard Insecticide

___2 points

Low to Very 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, scab, rhizoc)

___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	<input type="checkbox"/>
Scout fields for diseases on a regular basis	___3 points	
Apply Boron to prevent brownheart	___3 points	

If Black Rot was found in the field would you:
Isolate field and disinfect all equipment

	___3points	<input type="checkbox"/>
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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	<input type="checkbox"/>
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 throughout the growing season.	___4 points	<input type="checkbox"/>
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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	<input type="checkbox"/>
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	<input type="checkbox"/>
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%

< 98 = No IPM

98-122 = Emerging IPM

123-139 = Basic IPM

140-155 = Established IPM

156-160 = Advanced IPM

> 160 = Optimal IPM

**Rutabaga - Registered Insecticides
Toxicity List for IPM Protocol**

LOW

Spinosad
Bt

MODERATE

Carbaryl
Cypermethrin
Permethrin
Dimethoate
Malathion

HIGH

Azinphos methyl
Chlorpyrifos
Endosulfan
Terbufos