

# Radish IPM Elements

Revised March, 2012

Edited by Jim Jasinski

Contributing Authors: Celeste Welty (Entomology);  
Bob Precheur, Mark Bennett, Doug Doohan (Horticulture & Crop Science);  
Sally Miller (Plant Pathology), Jim Jasinski (Extension)

The purpose of this document is to consolidate current Ohio information on Integrated Pest Management (IPM) in the form of general working practices or tactics for a specific crop. The second intent is to use this checklist as an evaluation instrument for growers applying to conservation programs such as Environmental Quality Incentives Program (EQIP). This document is intended to help growers identify areas in their production system that possess strong IPM qualities and also point out areas for improvement.

Growers should review the seven sections of this document and indicate which practices they **currently use** on this crop in their operation. There is a point value associated with every IPM practice; the higher the number, the greater the relative importance of the practice. After going through the list, add the associated values for each section to get the **Baseline IPM Score**. Growers will complete this evaluation every year of their contract, and maintain at least 60% of the total points available each year of the contract to be considered in compliance and eligible for a payment.

## **Major Pests of Radishes - Primary concerns are diseases, insects, and weeds**

<b>Diseases</b>	<b>Insects</b>	<b>Weeds</b>
Damping off	Root maggot	Annual grasses
Powdery mildew	Flea beetles	Annual broadleaf weeds
Downy mildew	Aphids	Perennial weeds
Club Root	Wireworms	
White Rust	Cutworms	
<i>Rhizoctonia</i>	Imported cabbageworm	
	Diamondback moth	
	Cabbage looper	

## Educational IPM Considerations

Place a check mark in the right hand column for activities currently used or expected to adopt on your farm.

Activity	Points	IPM Score			
		Baseline	1 <sup>st</sup> Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
Join local or state grower associations that handle this commodity.	5				
Attend winter or summer educational meetings or field days annually to keep current on pest management recommendations.	10				
Access University based vegetable information websites for research based information	5				
Obtain the latest Ohio Vegetable Production Guide (Bulletin 672) and other commodity specific reports / production guides.	10				
Subscribe to "free" VegNet newsletter for updates on disease, insect, and weed development, plus management options during the growing season.	10				
Research alternative markets that encourage less pesticide use either through specific use reduction requirements (organic, eco-, IPM labels) or simply by permitting more insect feeding, etc.	5				

**Your section total is \_\_\_\_\_ pts.**

## Pesticides and Record Keeping

Place a check mark in the right hand column for activities currently used or expected to adopt on your farm.

Activity	Points	IPM Score			
		Baseline	1 <sup>st</sup> Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
Calibrate insecticide and fungicide sprayer at least once a year.	10				
Calibrate herbicide sprayer at least once a year.	10				
Use drift control nozzles for pesticide applications	10				
Maintain accurate and organized spray records.	15				
Maintain accurate records of planting dates, field locations, varieties, and fertilizer applications.	10				
Analyze spray records to determine Environmental Impact Quotient.	10				
Among pesticides of comparable efficacy, use the one with the lowest Environmental Impact Quotient.	10				

**Your section total is \_\_\_\_\_ pts.**

## Pre-plant IPM Considerations

Place a check mark in the right hand column for activities currently used or expected to adopt on your farm.

Activity	Points	IPM Score			
		Baseline	1 <sup>st</sup> Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
Select a properly rotated, well drained site.	15				
Soil test annually; amend soil with fertilizer or compost according to guidelines and yield of crop. <b>(Nutrient Management – 590)</b>	15				
Adjust soil pH to 5.2-5.6 on muck soils and 6.0-6.8 on mineral soils.	15				
Apply 1 lb Boron per acre.	5				
Adjust N application to account for any N given by cover crop, compost or other sources of organic nitrogen.	10				
Conserve organic matter by using no-tillage or minimum tillage to plant. <b>(No-Till – 329)</b>	10				
Practice weed seed exclusion tactics such as high pressure washing machinery shared between farms.	15				
Buy certified seed and weed free soil mixtures; determine weed seed content of all seed and do not plant seed contaminated with weed seed not known to occur on your farm.	15				
Use site free of perennials such as quack grass, Johnson grass, Yellow nutsedge, or Canada thistle if possible.	15				
Use a combination of fall/spring tillage and fall/spring application of a broad spectrum herbicide to control established perennials or rotate with a herbicide resistant crop on which a broad spectrum herbicide was used.	15				
Use stale seed bed technique.	10				
Use fungicide treated seed to avoid seedling diseases.	15				
Select hybrids well adapted for your growing area with good tolerance or resistance to powdery mildew, downy mildew, club root, rhizoctonia, and white rust.	15				

Your section total is \_\_\_\_\_ pts.

### At-planting IPM Considerations

Place a check mark in the right hand column for activities currently used or expected to adopt on your farm.

Activity	Points	IPM Score			
		Baseline	1 <sup>st</sup> Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
Apply pre-emerge herbicides to control seedling broad leaves and annual grasses up to 3 leaf stage.	15				
Apply soil insecticides to control soil dwelling insects if detected in field.	10				
Use row covers to eliminate early season insect feeding on seedlings.	10				

**Your section total is \_\_\_\_\_ pts.**

### In-season IPM Considerations

Place a check mark in the right hand column for activities currently used or expected to adopt on your farm.

Activity	Points	IPM Score			
		Baseline	1 <sup>st</sup> Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
Scout for aphids and other pests weekly; use selective insecticide applications to control insect pests but allow survival of natural enemies.	15				
Scout for fungal diseases later in the season, apply controls where necessary.	15				
Use directed or shielded applications of post emerge herbicides to control emerged perennial weeds, broad leaves, or grasses.	10				
Watch for weeds that are not common or are new to the field, physically remove them in order to prevent seed production.	15				

**Your section total is \_\_\_\_\_ pts.**

### Harvest IPM Considerations

Management	Activity	Points
	None described	

## Post-Harvest IPM Considerations

Place a check mark in the right hand column for activities currently used or expected to adopt on your farm.

Activity	Points	IPM Score			
		Baseline	1 <sup>st</sup> Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
Plow down residue as soon as possible after harvest to reduce weed residue, fungal inoculum, and insect over wintering locations.	15				
Evaluate new IPM practices used on the farm this year, even if used on limited acreage. Implement successful practices over greater acreage next season.	10				
Plant a cover crop as soon as harvest is complete. ( <b>Cover Crops - 340</b> )	15				
Update field weed maps, use to make treatment decisions next season.	15				
Control weeds after harvest to prevent further growth and seed production.	15				

Your section total is \_\_\_\_\_ pts. Total points for Element is 450.

**Baseline IPM Score** (Add the scores of the previous 7 sections)

\_\_\_\_\_

**End of Year 1 at least 60% of total IPM Element points**

\_\_\_\_\_

**End of Year 2 at least 60% of total IPM Element points**

\_\_\_\_\_

**End of Year 3 at least 60% of total IPM Element points**

\_\_\_\_\_