

Lettuce IPM Elements

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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 Lettuce - Primary concerns are diseases, insects, and weeds

Diseases	Insects	Weeds
Aster yellows	Aphids	Annual grasses
Damping off	Aster leafhopper	Annual broadleaf weeds
Downy mildew	Cabbage looper	Perennial weeds
<i>Rhizoctonia</i> bottom rot		
<i>Sclerotinia</i> drop		
<i>Botrytis</i> gray mold		
Lettuce mosaic virus (LMV)		

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 st Yr	2 nd Yr	3 rd 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 st Yr	2 nd Yr	3 rd 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 st Yr	2 nd Yr	3 rd Yr
Soil test annually; amend soil with fertilizer or compost according to guidelines and yield of crop. (Nutrient Management – 590)	15				
Desired soil pH is 5.4 - 6.0 on muck soils and 6.0 - 6.8 on mineral soils.	15				
Apply 100% of P and K according to soil test.	15				
Broadcast and disc in all fertilizer prior to seeding.	10				
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. (No-Till – 329)	10				
Select a well drained muck soil site if possible, otherwise select a well drained mineral soil.	15				
Prepare raised beds for increased disease prevention. (Bedding – 310)	10				
Keep old and new lettuce fields as far apart as possible to avoid Lettuce Mosaic Virus (LMV) from being vectored between plantings.	10				
Use fungicide treated seed to protect against seedling diseases.	15				
If direct seeding, use pelleted seed in precision seeders to promote uniform emergence.	15				
Acquire only LMV free seed.	15				
Select hybrids well adapted for your growing area with good tolerance or resistance to other diseases.	15				
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 transplants to increase crop competitiveness with weeds	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.	15				
Only use fields that have not been planted to lettuce for at least 2 years. (Conservation Crop Rotation – 328)	15				
Space rows for good aeration and drying.	10				

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 st Yr	2 nd Yr	3 rd Yr
Apply pre-emerge herbicides to control seedling broadleaf weeds and annual grasses if present at damaging levels.	10				
Use row covers to control aphids and leafhoppers	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 st Yr	2 nd Yr	3 rd Yr
Update field weed maps, use to make treatment decisions next season.	15				
Watch for weeds that are not common or are new to the field, physically remove them in order to prevent seed production.	15				
Control nearby weeds that may harbor LMV potentially vectored to crop by aphids.	10				
Cultivate to control weeds when possible.	10				
Control annual and perennial grasses with broadcast application of herbicide or apply shielded application to suppress weeds between crop rows after crop establishment.	10				
Scout for aster leafhopper using yellow sticky cards and sweep net.	10				
Send specimens caught in late May and early June to OARDC to be tested for aster yellows.	10				
Spray leafhoppers only if aster yellows is detected, using an adult control spray approximately 10-14 days after crop emergence or for nymph control spray approximately 14 days before harvest.	15				
Scout for aphids during seedling stage and there after, apply controls if they exceed thresholds established in the Ohio Vegetable Production Guide (OVPG, Bulletin 672).	15				
Use chart in OVPG (Bulletin 672) to select insecticides that will kill worm infestations if they exceed 15% of the stand or if aphids are present, but minimize impact on natural enemies.	15				
Remove and destroy plants with sclerotinia symptoms as soon as wilting appears.	10				

Your section total is _____ pts.

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 st Yr	2 nd Yr	3 rd Yr
Wash lettuce after harvest to remove aphids, reducing the need for strict aphid control in the field.	10				

Your section total is _____ pts.

Post-Harvest IPM Considerations

Please circle the points in the right hand column of activities currently performed on your farm.

Activity	Points	IPM Score			
		Baseline	1 st Yr	2 nd Yr	3 rd 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 cover crops as soon as crop is harvested. (Cover Crops – 340)	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 640.

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** _____