Pear 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 Pear - Primary concerns are insects, mites, diseases & weeds

Diseases	Insects & Mites	Weeds
Pear scab	Pear psylla	Annual grasses
Fire blight	Codling moth	Perennial grasses
Sooty blotch	San Jose scale	Annual broadleafs
Fly speck	Tarnished plant bug	Perennial broadleaf
Fabraea leaf spot	Plum curculio	Yellow nutsedge
Phytophthora collar and root rot	Stink bugs	
	Aphids	
	Pear sawfly (pear slug)	
	Pear rust mite	
	European red mite Two-spotted spider mite	
	Pear leaf blister mite	

Educational IPM Considerations

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

		IPM Score			
Activity	Points	Baseline	1st Yr	2nd Yr	3rd 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 fruit information websites for research based information	5				
Obtain the latest Ohio Commercial Tree Fruit Spray Guide. The Midwest Tree Fruit Pest Management handbook and other commodity specific reports, bulletins, or production guides	10				
Subscribe to the Ohio ICM Fruit or other 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.

		IPM Score			
Activity	Points	Baseline	1st Yr	2nd Yr	3rd 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.

Soil and Nutrient Management and Cultural Practices

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

		IPM Score			
Activity	Points	Baseline	1st Yr	2nd Yr	3rd Yr
Soil test; amend soil with fertilizer or compost according to guidelines and yield of crop. (**Nutrient Management – 590)**	15				
Adjust mineral soil pH to 6.0-6.8.	10				
Balance nitrogen with plant growth without promoting rapid growth and prolong succulence. (Conduct leaf analysis every year)	10				
Adjust N application to account for any N given by cover crop, compost or other sources of organic nitrogen.	10				
Before planting the orchard, pick a planting site with excellent soil drainage and full exposure to the sun. If drainage is not excellent, perform practices to improve drainage such as planting on ridges (burms) or tiling.	15				
Use a water quality and placement plan that minimizes disease development, optimizes water use and minimizes erosion and runoff.	5				
Plant rows in the direction of prevailing winds to promote better air circulation and faster drying in the orchard.	10				
Prune annually to open the canopy and maintain tree height at a manageable level.	10				
Thin fruit, especially in clusters, to insure faster drying and complete fungicide coverage, as well as to promote fruit size and return bloom.	5				

Your section total is_____pts.

Disease Management

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

		IPM Score			
Activity	Points	Baseline	1st Yr	2nd Yr	3rd Yr
Use fungicides or fungicide combinations that allow extended spray intervals (10-14 days) rather than a 7-day protectant program (i.e. sterol-inhibitor plus protectant or strobilurin fungicides) to reduce overall fungicide use. If other options are not available use a 7-day protectant program to insure adequate disease control.	15				
When using fungicides with a high potential for fungicide resistance development use 2-spray block alternations of different fungicide chemistries to prevent or delay the development of resistant strains of pathogenic fungi.	10				
Use weather forecasts (principally for rain) to adjust (shorten or extend) fungicide spray intervals.	10				
The application of disease control chemicals for scab, fire blight, and other diseases is based on disease models or predictive systems that consider environmental conditions (temperature-wetness) and/or disease pressure.	10				
When selecting new cultivars for planting, consider varieties with resistance scab, fire blight, and other major diseases.	15				
When selecting rootstocks for new plantings, consider resistance to collar rot and fire blight.	15				
Select planting sites with excellent soil drainage to prevent problems with Phytophthora collar or root rot, or improve soil drainage with tile or by planting on ridges.	15				
Remove large brush and brush piles from the orchard and other debris (dead wood) from trees annually.	15				
Remove reservoir hosts (wild blackberry) for sooty blotch and fly speck annually.	10				
Remove dead leaves from the ground or use practices (i.e. urea application or mowing) to degrade dead leaves in order to reduce scab inoculation.	10				

Your section total is_____pts.

Arthropods Management (Insects and mites)

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

		IPM Score			
Activity	Points	Baseline	1st Yr	2nd Yr	3rd Yr
To confirm the need for prebloom treatment of pear psylla, use a beating tray early in the morning to sample populations of adults.	15				
In winter or very early spring, collect and open pear buds to determine the relative density of pear rust mite in the orchard. Later in the spring, sample 25 fruit clusters for pear rust mite. Treatment is advised when five or more clusters are infested.	15				
In spring, examine leaves for pear sawfly larva. Re-inspect in late July or August for the summer generation.	5				
Use pheromone traps to monitor adult codling moth for control toward second generation when 1400 to 1600 degree-days (base 50) are accumulated from January 1.	5				
Choose insecticides for psylla in rotation to diminish buildup of resistant populations.	10				
Prune water sprouts in early summer to destroy the favorite habitat of pear psylla.	10				

Your section total is_____pts.

Weed Management

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

		IPM Score			
Activity	Points	Baseline	1st Yr	2nd Yr	3rd Yr
For new orchards, eradicate perennial weeds and reduce the soil weed seed bank the year prior to planting by using herbicides, cultivation, and cover crops.	15				
Establish a non-competitive grass between tree rows prior to planting a new orchard to help control weeds	15				
Use an herbicide to establish planting strips in established sod.	10				
Identify and list problem weeds and locations to tailor herbicide and floor management practices. If herbicides are needed, product choice, rate, and area to be treated are based on identified weed species and locations.	15				
If needed, apply soil active herbicide prior to weed emergence. Do not use herbicides of the same class in successive years.	15				
If perennial weeds are present, time herbicide applications to weed growth stage as specified on the product label.	15				

Your section total is_____pts. **Total points in Element is 470**

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 _____