

Raspberry 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 Raspberry- Primary concerns are insects, diseases & weeds

Diseases	Insects & Mites	Weeds
Viruses	Raspberry fruitworm	Annual grasses
Verticillium wilt	Tarnished plant bug	Perennial grasses
Powdery mildew	Picnic beetles	Annual broadleaves
Cane blight	Japanese beetles	Perennial broadleaf
Phytophthora root rot	Strawberry bud weevil	
Orange rust	Raspberry crown borer	
Viruses	Two spotted spider mit	

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 fruit information websites for research based information	5				
Obtain the latest Ohio Commercial Small Fruit Spray Guide. The Midwest Small Fruit Pest Management handbook and other commodity specific reports/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.

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.

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.

Activity	Points	IPM Score			
		Baseline	1 st Yr	2 nd Yr	3 rd 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 5.5-6.5.	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				
Choose a site that has good surface drainage; tile perennially wet fields. Prevent standing water between rows with a good layer of mulch or grassed alley way	15				
Use a water quality and placement plan that minimizes disease development, optimizes water use and minimizes erosion and runoff.	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.

Activity	Points	IPM Score			
		Baseline	1 st Yr	2 nd Yr	3 rd Yr
When using fungicide 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.	15				
Select fungicides or fungicide combinations that will control all of the potential diseases that can develop. Especially the fruit rots (Botrytis and anthracnose fruit rots and leather rot).	10				
Use weather forecasts (principally for rain) to adjust (shorten or extend) fungicide spray intervals.	10				
Disease resistant cultivars were planted if available. Especially for Phytophthora root rot and raspberry leaf spot. Check with the nursery or OSU extension to learn if any new varieties of blackberry or black raspberry with resistance to orange rust have been released.	15				
Prune and remove infected or old canes to reduce disease pressure and improve air circulation.	15				
Remove wild brambles within 500 ft from planting.	15				
Inspect the planting early in the growing season (before orange rust spores develop) and remove and destroy plants with symptoms of viruses and/orange rust. Orange rust is only a problem on black raspberry and black berry.	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.

Activity	Points	IPM Score			
		Baseline	1 st Yr	2 nd Yr	3 rd Yr
Field is not located within 250 yards of conifers to avoid blackberry psyllid	15				
Select varieties with resistance to raspberry aphids (to help with virus management because viruses are vectored by aphids).	15				
Branches damaged by cane borers or crickets are removed by pruning	5				
Good weed control is employed to reduce overwintering sites for fruitworm.	5				
Ripe and cull berries are promptly removed to better manage Japanese beetles, yellow jackets, and picnic beetles	10				
Cultivate in early fall to kill pupae of fruitworm and Japanese beetle in soil.	10				
Bait buckets are used during harvest for picnic beetles	10				
Remove and destroy plants infested with raspberry crown borer.	15				
Leaves and clusters are examined for clipped buds (caused by clipper weevil) and holes (caused by fruitworm).	10				
Flowers are sampled for tarnished plant bugs	10				
Sampling of leaves for mites and miscellaneous pests	10				
Select insecticides based on minimizing toxicity to predatory and beneficial insects	10				
Field is not located within 250 yards of conifers to avoid blackberry psyllid	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.

Activity	Points	IPM Score			
		Baseline	1 st Yr	2 nd Yr	3 rd Yr
Eradicate perennial weeds and reduce the soil weed seed bank the year prior to planting by using herbicides, cultivation, and cover crops.	15				
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				
A permanent sod between rows is used to help control weeds	15				

Your section total is _____pts.

Total points in Element is 485.

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
