

2019 Ranking of Tree Fruit IPM Research and Extension Priorities - Summary

Respondent Groups:

1: LOFP Fruit School, Lockport - Feb. 4, 2019 (45 Respondents)

2: LOFP Fruit School, Newark - Feb. 5, 2019 (28 Respondents)

3: New England/NY/Canadian Fruit IPM Workshop, Burlington, VT - Oct. 23, 2018 (20 respondents)

Pome Fruit Diseases	Group/Percent Ranking				Pome Fruit Indirect Pests/Beneficials	Group/Percent Ranking			
	1	2	3	Avg		1	2	3	Avg
Apple scab	17.4	14.4	26.4	19.4	Euro. red mite/2-spotted spider mite	13.9	9.7	19.5	14.4
Fire blight	24.5	28.6	29.0	27.4	San Jose Scale	17.3	22.2	16.8	18.8
Powdery mildew	9.8	7.7	3.6	7.0	Predator mites	7.3	8.5	6.4	7.4
Sooty Blotch/Flyspeck	3.4	2.4	6.9	4.2	Borers (dogwood/black stem borer)	11.6	17.9	21.5	17.0
Fruit Rots	4.9	4.8	18.1	9.3	Woolly apple aphid	17.1	11.9	7.4	12.1
Rust diseases	3.4	1.2	1.4	2.0	Potato/White apple leafhoppers	2.6	1.2	4.7	2.8
Replant disease	5.8	4.1	0.4	3.4	Leafminers	2.8	3.0	0.0	1.9
Anthraxnose	0.0	0.0	0.0	0.0	Pear psylla	5.5	4.0	7.4	5.6
Cankers	1.3	3.1	1.4	1.9	Rosy apple aphid	5.3	8.2	1.3	5.0
Root rots	1.5	1.9	0.0	1.1	Mealybugs	1.2	0.0	0.0	0.4
Fabraea leaf spot	0.2	0.0	0.7	0.3	Predator conservation	8.3	7.0	13.1	9.5
Phytophthora	1.5	0.5	0.0	0.6	Apple leafcurling midge	0.0	0.9	1.3	0.8
Storage rots/pre-harvest sprays	5.1	3.8	2.9	3.9	Rust mites	1.0	0.0	0.0	0.3
Tree stress (-->black stem borer)	4.9	8.9	3.6	5.8	Parasitic wasps	6.1	5.5		5.8
Scald	0.9	0.0	0.0	0.3	Oystershell scale	0.2	0.0		0.1
Sudden Apple Decline syndrome	8.9	13.7	5.4	9.3	Peach Diseases	1	2	3	Avg
Viruses	2.2	3.8		3.0	Brown rot	24.8	26.6	31.1	27.5
Lenticel breakdown	4.2	1.0		2.6	Bacterial spot	9.1	10.7	20.0	13.3
Scarf skin (write-in)	0.2			0.2	Peach leaf curl	12.7	10.3	11.1	11.3
Pome Fruit Direct Insect Pests	1	2	3	Avg	Powdery mildew	10.6	6.1	3.4	6.7
Internal leps (CM/OFM/LAW)	18.8	18.9	24.1	20.6	X-disease	0.6	2.8	5.1	2.8
Plum curculio	12.3	8.5	19.4	13.4	Perennial canker	11.2	9.3	11.5	10.7
Apple maggot	8.6	9.3	12.4	10.1	Peach scab	2.1	6.1	0.4	2.9
Stink bugs	18.0	14.9	14.0	15.7	Phytophthora rots	2.9	5.1	4.7	4.3
Obliquebanded leafroller	5.9	2.9	6.7	5.2	Plum pox	5.0	3.3	0.0	2.8
Spotted wing Drosophila	9.2	7.5	4.7	7.1	Winter kill	5.3	9.3	9.8	8.1
European apple sawfly	1.5	0.3	1.3	1.0	Rusty spot	2.4	1.4	1.7	1.8
Tarnished plant bug	2.4	1.3	3.3	2.4	PGRs to promote dormancy	5.3	2.3	1.3	3.0
Spotted lanternfly	3.3	5.3	4.7	4.4	Frost	8.0	6.5		7.3
Scales	9.0	12.5	7.4	9.6	Cherry Arthropod Pests	1	2	3	Avg
Japanese beetle	1.5	2.9	2.0	2.1	Spotted wing Drosophila	20.9	30.4	32.7	28.0
Gypsy moth	0.9	1.1	0.0	0.7	Plum curculio	14.0	10.5	19.2	14.6
Invasive species	8.6	14.4		11.5	Cherry fruit flies	23.5	20.4	21.0	21.6
Peach Indirect Arthropod Pests	1	2	3	Avg	Japanese beetle	8.6	2.1	7.9	6.2
Japanese beetle	18.9	12.0	18.2	16.4	Peachtree borers	6.0	9.4	9.3	8.3
Peachtree borers	22.2	25.9	30.5	26.2	Brown marmorated stink bug	10.3	11.5	3.7	8.5
Mites	12.3	19.9	14.8	15.7	Aphids	5.7	3.7	4.2	4.5
Scales	15.6	17.1	22.5	18.4	American plum borer	3.7	4.7	0.9	3.1
American plum borer	15.9	15.7	2.1	11.3	Scales	5.7	7.3	0.9	4.7
Green peach aphid	15.2	9.3	11.9	12.1	European cherry fruit fly (write-in)	1.4			1.4

Peach Direct (Fruit) Insect Pests	Group/Percent Ranking				Vertebrate Pests	Group/Percent Ranking			
	1	2	3	Avg		1	2	3	Avg
Stink Bugs: Brown marmorated etc	21.9	24.2	26.0	24.0	Deer	28.4	30.6	31.1	30.0
Plum curculio	17.7	13.2	18.9	16.6	Voies	18.0	17.7	22.6	19.4
Oriental fruit moth	18.6	13.7	22.0	18.1	Birds	19.7	15.9	21.5	19.0
Spotted wing Drosophila	13.2	21.6	13.0	15.9	Rabbits	6.4	6.7	3.7	5.6
Tarnished plant bug	5.1	4.0	8.7	5.9	Turkeys	1.7	1.2	2.6	1.8
Obliquebanded leafroller	3.5	0.9	2.8	2.4	Groundhogs	5.1	7.6	3.7	5.5
Western flower thrips	1.0	0.9	0.0	0.6	Canada geese	1.7	0.9	1.1	1.2
Japanese beetle	9.0	9.3	3.5	7.3	Beavers	4.4	1.2	0.7	2.1
Wasps	3.5	1.8	3.9	3.1	Porcupines	0.4	0.0	2.2	0.9
White "peach" (Prunicola) scale	5.1	10.6	1.2	5.6	Raccoons	7.2	6.1	0.0	4.4
Wheel bug (write-in)	1.3			1.3	Crows	5.3	10.4	3.7	6.5
Cherry Diseases/Disorders	1	2	3	Avg	Foxes	0.0	0.0	0.0	0.0
Brown rot	28.4	25.8	34.1	29.4	Coyotes	1.7	0.3		1.0
Bacterial canker	17.1	11.1	21.6	16.6	Squirrels	0.0	1.2	3.3	3.3
Leaf spot	7.1	8.9	13.0	9.7					
X-disease	0.6	3.2	2.7	2.2	Regulatory Issues	1	2	3	Avg
					Pesticide registration				
Fruit cracking	19.0	16.8	18.9	18.3	procedures/restrictions	12.7	15.8	22.1	16.9
Black knot	5.2	9.5	5.4	6.7	Clarification of labels	2.4	4.5	13.1	6.7
Viruses	5.8	6.8	0.5	4.4	Harmonization of labels	7.5	1.0	9.7	6.1
Phytophthora	2.3	3.2	2.2	2.5	Invasive species	12.9	8.1	13.9	11.6
					Production standards for				
Powdery mildew	11.0	10.5	1.6	7.7	imports/exports (MRLs)	2.2	1.6	5.6	3.1
Frost	3.5	4.2		3.9	Right-to-farm/drift issues	5.4	11.0	6.7	7.7
Postharvest Issues	1	2	3	Avg	Smaller package sizes	0.6	0.6	1.5	0.9
					Use of "Generally Regarded As Safe"				
Post-harvest decay management	13.0	9.4	24.5	15.6	products	3.4	2.9	0.4	2.2
GAPS & Food safety	14.5	16.4	15.8	15.6	Labor Regulations	14.0	15.8	4.9	11.6
Post-harvest drench alternatives	3.7	3.3	12.9	6.6	Surface water regulations	3.9	2.9	1.5	2.8
Bin sanitation	7.7	6.7	3.7	6.1	Fast-track NYS label registrations	8.0	7.1	1.9	5.6
Scald	3.7	2.4	2.9	3.0	Updates on WPS	2.4	4.8	0.4	2.5
Bitter Pit	19.7	25.5	23.7	23.0	Pollinator protection	8.2	7.1	7.9	7.7
Packing line sanitation	1.2	1.2	1.7	1.3	Spanish labels	0.2	0.0	1.9	0.7
1-MCP	1.4	2.7	1.2	1.8	Container disposal	4.3	4.5	1.1	3.3
CO2 Damage	3.7	1.5	0.8	2.0	Cost containment	3.4	4.2	2.2	3.3
Flesh browning	5.8	7.3	4.6	5.9	Food processing license fees (cider)	0.0	0.0	1.5	0.5
Storage Sanitation in (FSMA)	4.4	4.0	2.9	3.8	Soap bars for deer control	2.6	2.3	1.1	2.0
Small bin controlled storages (CAN)	1.0	0.6	0.0	0.5	FSMA	5.6	5.8	2.6	4.7
Ultra-low oxygen	0.2	0.6	0.4	0.4	Plum pox quarantine	0.5			0.5
Soft scald	2.3	3.0	3.3	2.9	European fruit fly quarantine (write-in)	0.4			0.4
Harvista vs. Retain	11.6	9.4		10.5					
Too much rain	2.3	5.2		3.7					
Lenticel breakdown	3.9	0.6		2.2					
Soggy breakdown			1.7	1.7					

Ground Cover Management	Group/Percent Ranking				Pest Management Education Issues	Group/Percent Ranking			
	1	2	3	Avg		1	2	3	Avg
Alternatives to herbicides, mulching	13.7	10.7	24.6	16.3	Workshops for advisors/growers	9.8	16.5	20.5	15.6
Perennial weed management	16.1	14.6	24.6	18.5	Orchard demos	13.9	12.3	11.7	12.7
Use of new herbicides	9.1	9.8	8.7	9.2	Production Guidelines publication	6.9	5.2	14.4	8.8
Herbicide resistance	7.6	10.4	6.8	8.3	Web-based delivery methods	4.9	6.8	12.8	8.1
Timing of control methods	9.1	11.0	9.5	9.8	Pesticide applicator workshops	8.8	10.7	6.7	8.7
Winter injury, etc. from glyphosate	4.1	1.7	3.8	3.2	Pesticide safety programs	5.3	3.6	1.7	3.5
Weed biology & ID	5.0	2.8	3.4	3.7	Smart phone apps	12.2	6.1	3.7	7.3
Nutrient competition	3.0	6.2	1.5	3.6	Consumer education	7.1	7.8	5.0	6.6
Best use of old herbicides	4.3	3.7	3.0	3.6	Biocontrol demos	2.4	2.3	3.7	2.8
Herbicide phyto and soil health	4.6	3.7	4.2	4.2	Education for policy makers	8.8	10.4	5.0	8.1
Under-tree ground covers	5.9	3.7	3.4	4.3	Virtual IPM workshops based on plant	2.2	1.0	0.0	1.0
Biological weed control	0.6	1.4	1.1	1.0	e-version of Guidelines; web or apps	4.9	1.0	9.4	5.1
Organic weed control	4.6	4.2	0.8	3.2	Training for pstc applicator exams	3.1	2.6	1.3	2.4
Weed control vs. yield	4.8	8.1	4.5	5.8	Pesticide training for H2A/Hispanic staff	5.3	6.8	1.0	4.4
Herbicide damage to trees/fruit	5.9	5.1		5.5	On-farm scout training & certification	4.5	5.8	3.0	4.5
Mulch types & adaptability	1.5	3.1		2.3	Guidelines under NEWA (write-in)+F146		1.3		1.3
Application Technology Issues	1	2	3	Avg	General IPM Issues	1	2	3	Avg
Spray coverage vs. control	15.5	23.1	29.7	22.8	Pesticide resistance	16.4	18.9	14.3	16.5
Calibration	10.7	11.6	14.8	12.4	Invasive/exotic species	13.8	9.1	20.0	14.3
Drift management	8.6	8.4	16.3	11.1	Weather/information delivery systems	7.6	7.4	15.3	10.1
Adjuvants w/ thinners (instd of oil)	7.8	4.3	4.9	5.7	Cost reduction	13.6	12.5	4.0	10.0
Phytotoxicity and fruit finish	11.7	7.8	5.7	8.4	Pollinator conservation	5.8	4.7	5.0	5.2
Canopy spray issues	4.0	6.6	2.3	4.3	Organic production	3.8	2.0	2.7	2.8
Fixed spraying systems	4.9	2.3	4.2	3.8	Pheromone technology	3.0	4.4	3.0	3.5
Single-sided sprays in high density plantings	6.9	7.8	0.4	5.0	OP/carbamate replacements	4.4	2.0	3.0	3.1
Herbicide shields	2.2	2.3	0.8	1.8	Abandoned orchard impact	2.0	0.7	1.3	1.3
Tower sprayer options	4.7	5.8	4.9	5.2	IFP certification	0.8	1.7	0.0	0.8
Application of growth regulators to canopy	10.6	5.2	1.1	5.6	Groundwater monitoring	2.6	3.0	0.0	1.9
Tank mixes (synergistic or antagonistic effects)	6.4	5.8	8.0	6.7	Metrics of IPM adoption	1.8	0.0	3.7	1.8
Crop-adapted spraying	1.6	1.4	2.3	1.8	Impacts of product losses on mgt programs	1.8	5.4	0.7	2.6
Better herbicide applic. techniques	4.4	6.1	4.2	4.9	Drones for crop mgt	2.8	6.7	0.7	3.4
Terrain	0.0	1.4		0.7	Beneficial insects	9.8	8.1	1.7	6.5
2-D Canopy mgt for application optimization			0.4	0.4	Pest monitoring & thresholds	6.4	8.4	9.3	8.1
					Multiple pest/disease economics & thresholds	3.6	5.1	3.0	3.9
					Climate change adaptation			12.3	12.3