

APPLE SPRAY SCHEDULE—COMMERCIAL

Insect	Material and Formulation	Dosage of Insecticides/Acre	Remarks/Precautions	Days to Harvest
GREEN TIP TO 1/2" GREEN				
San Jose Scale	Oil	2 gal	Best to use a superior-type or highly refined summer oil applied dilute for best results. If the oil application is delayed until tight cluster to pink, reduce oil to 1/2-1 gal/100 gal water. Do not use Captan or Sulfur within two weeks of an oil application.	
European Red Mite Eggs	Oil + Lorsban 50W	2 gal + 3 lb		post bloom
Rosy Apple Aphid Eggs	Supracide 2E	1-2 pt		pre bloom
	Esteem 0.86EC	13-16 oz		45
	Danitol 2.4EC	10.6-21.3 fl oz		14
	Asana	2-5.8 oz		21
	Ambush	1.6-3.2 oz		21
	Warrior	2.56-5.12 oz	21	
Initiate Oriental Fruit Moth Scouting Program			Place 3 OFM pheromone traps in orchard interior by green tip to detect first moth emergence (mid- to late March).	
Mating Disruption for Oriental Fruit Moth	Isomate-OFM TT	100/acre	Use 100 dispensers per acre. Twist-tie loosely to lateral branches in upper third of tree canopy.	
	Isomate M-Rosso	100-200/acre	Use 200 dispensers per acre for moderately to highly infested orchards. Twist-tie loosely to lateral branches in upper third of tree canopy.	
TIGHT CLUSTER TO PINK				
Initiate Codling Moth Scouting Program			Place 3 CM pheromone traps in orchard interior to detect first moth emergence (early to mid-April).	
Rosy Apple Aphid	Thiodan 3EC	2/3 qt	Pink stage is the optimum timing for control of rosy apple aphid. Caution: In some blocks, rosy apple aphid is resistant to Thiodan/Phaser, Ambush and Asana. Caution: Use of Asana or Ambush is discouraged, as they are likely to cause increased mite problems later in the season. Use of these materials will eliminate mite predator populations. Pyrethroids may also lead to increased populations of woolly apple aphid, San Jose scale and Comstock mealybug. If there is a history of plant bug problems, a second application at petal fall will help. Keeping the orchard groundcover free of broadleaf, flowering weeds will also lessen the bug population and keep pollinators in the fruit trees.	21
Plant Bugs	Phaser 3EC	2/3 qt		21
	Azinphosmethyl 50	1.5-2 lb		21
	Danitol 2.4EC	10.6-21.3 fl oz		14
	Ambush	1.6-3.2 oz		pre petal fall
	Asana	2-5.8 oz		21
	Actara 25W	2-5.5 oz		35
	Provado	8 fl oz		7
	Assail 70WP	1.1-1.7 oz		7
	Calypso 4F	2-4 oz		30
Spotted Tentiform Leafminer	Thiodan 3EC	2/3 qt	The need for insecticide against STLM at this time is questionable, because the number of first generation mines rarely exceeds threshold level of two per leaf.	21
	Phaser 3EC	2/3 qt		21
	Danitol 2.4EC	10.6-21.3 fl oz		14
	Lannate 90SP	1/2 lb		14
	Vydate 2L	2-4 pt		14
BLOOM			PROTECT POLLINATORS!! DO NOT SPRAY INSECTICIDES DURING BLOOM.	
Codling Moth	Isomate-C PLUS	400/acre	Use 400 dispensers per acre. Apply double rate of dispensers to edges of orchard. Twist-tie loosely to lateral branches in upper third of tree canopy.	
	Isomate-C TT	200/acre	Use 200 dispensers per acre. Apply double rate of dispensers to edges of orchard. Twist-tie loosely to lateral branches in upper third of tree canopy.	

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PETAL FALL				
European Red Mite	Agri-Mek 0.15EC + oil	2.5 oz	Application of Agri-Mek at petal fall should provide season-long suppression of these pests. A paraffinic spray oil (0.25% or 1 gal/A) MUST be tank mixed to ensure activity of Agri-Mek. Do not use Captan or Sulfur within two weeks of the oil + Agri-Mek application.	28
Spotted Tentiform Leafminer	Zeal 72 WDG	2-3 oz		
White Apple Leafhopper				
European Red Mite	Apollo	4-8 oz		Apollo and Savey are most effective if applied after petal fall or first cover.
Two-Spotted Spider Mite	Savey 50	3 oz		28
	Danitol 2.4EC	16-21.6 fl oz		14
	Kanemite 15 SC	21-31 oz	Apply before mites reach threshold of more than 2.5 mites per leaf.	14
Plum Curculio	Guthion Solupak	1/2-3/4 lb	Adults enter the orchards from late March to mid-April. Cool weather during this time may extend adult feeding and egg laying activity into early May. After bloom, look for feeding damage on fruit, especially along orchard perimeter adjacent to woods (overwintering site). Adults move into the orchard from 100 to 400 degree days (DD) (base temperature of 50 degrees F) accumulated after two days above 70 degrees F in March. A preventive spray is recommended to minimize damage on fresh market apples between 100 to 400 DD. Daily degree day (DD) = (maximum daily temperature + minimum daily temperature)/2 – 50.	21
Oriental Fruit Moth	Imidan 70W	2 1/8-5 1/3 lb		7
	Avaunt 30WG	5-6 oz		14
	Actara 25W	4.5-5.5 oz		35
	Calypso 4F	4-8 oz		30
Plum Curculio	Assail 30 SG	8 oz	Do not make more than two applications per season on 14-day interval. Do not exceed 5.3 oz per acre per season.	7
Oriental Fruit Moth			Applying insecticide between 300 and 700 DD after biofix (first trap catch) will control the first generation of Oriental fruit moth; if not, use mating disruption.	
San Jose Scale				
San Jose Scale	Azinphosmethyl 50W	1.5-2 lb	Where scale is a problem, insecticide should be applied as long as crawlers are active. Crawlers can be detected by wrapping double-stick tape around infested limbs in early May. Inspect the tape weekly for yellow crawlers. Caution: Diazinon applied with Captan or Captec may cause phytotoxicity or russetting.	21
	Diazinon AG600	12.75 oz		21
	Esteem 0.86EC	1/2 lb		45
	Guthion Solupak	1/2-3/4 lb		21
	Imidan 70W	2 1/8-5 1/3 lb		7
	Summer oil	1%-2%		0
White Apple Leafhopper	Actara 25W	4.5-5.5 oz	Threshold level for first generation white apple leafhopper is 1.0 nymph/leaf. Thinning apples with Sevin during this time controls leafhoppers. Leafhoppers may be present from petal fall to second cover.	35
	Provado 1.6F	1 oz		7
	Avaunt 30WG	5-6 oz		14
	Danitol 2.4EC	10.6-21.3 oz		14
Spotted Tentiform Leafminer	Lannate 90SP	1/2 lb	The need for insecticide against STLM is questionable, because the number of mines in Arkansas rarely exceeds the threshold level of two mines per leaf.	14
	Provado 1.6F	1-2 oz		7
	Spin Tor 2SC	5-8 oz		7
	Actara 25W	4.5-5.5 oz		35
	Danitol 2.4EC	10.6-21.4 fl oz		14
	Assail 70WP	1.1-1.7 oz		7
Rosy Apple Aphid	Diazinon AG600	12.75 oz	If an insecticide is not applied for rosy apple aphid at pink, or if control is poor, an insecticide should be applied. Caution: Diazinon applied with Captan or Captec may cause phytotoxicity or russetting. AG600 should not be applied after petal fall.	21
	Actara 25WP	4.5 oz		35
	Provado 1.6F	2 oz		7
	Danitol 2.4EC	10.6-21.3 fl oz		14

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PETAL FALL				
Green Fruitworm	Thiodan 3EC	2/3 qt	Green fruitworms are not a common pest. Apply an insecticide at petal fall if larvae are observed.	21
	Phaser 3EC	2/3 qt		21
Oriental Fruit Moth	Azinphosmethyl 50 W	1.5-2.0 lb	Do not exceed 8 lbs (4 lb ai) per acre per season.	21
Red Banded Leafroller	Biobit HP	0.5-1.0 lb	Biobit is a <i>Bt</i> formulation approved for organic production against codling moth and red banded leafrollers. Deliver and Javelin are <i>Bt</i> formulations approved for organic production against codling moth, Oriental fruit moth and red banded leaf-rollers.	0
Codling Moth	Deliver	0.5-2.0 lb	Cyd-X is a codling moth virus formulation approved for organic production. Use in non-chlorinated water. Use against hatching codling moth larvae. Apply weekly as necessary during hatch period.	0
	Javelin WG	0.5-4.0 lb		0
	Cyd-X	1.0-6.0 fl oz		0
FIRST COVER				
Codling Moth	Guthion Solupak	1/2-3/4 lb	If pheromone traps and the codling moth degree-day model are not used to time insecticide applications, an insecticide should also be applied at second and third cover. Guthion and Imidan generally provide nearly 2 weeks control, so don't be concerned if pheromone trap counts remain high 1 week after spraying.	21
	Imidan 70W	2 1/8-5 1/3 lb		7
	Confirm 2F	20 oz		14
	Intrepid 2F	10-16 oz		14
	Danitol 2.4EC	16-21 fl oz		14
	Avaunt 30WG	5-6 oz		14
Rosy Apple Aphid	SEE PETAL FALL			
Plum Curculio				
White Apple Leafhopper				
Spotted Tentiform				
Leafminer				
San Jose Scale				
SECOND COVER AND LATER SPRAYS				
Codling Moth	SEE FIRST COVER			
Oriental Fruit Moth	Guthion Solupak	1/2-3/4 lb	Be sure to keep trap bottoms clean and replace lures monthly. Pheromone dispensers should be applied by 900 degree days (late May).	21
	Imidan 70W	2 1/8-5 1/3 lb		7
	Intrepid 2F	10-16 oz		14
	Danitol 2.4EC	16-21 fl oz		14
	Avaunt 30WG	5-6 oz		14
	Isomate-OFM TT	100/acre		
	Isomate-M Rosso			
White Apple Leafhopper	Provado 1.6F	1 oz	Threshold level for second brood nymphs (which occur in late July to early August) is one nymph per leaf. Treatment at this time will eliminate the need to treat for adults immediately before harvest. Generally, low rates of insecticides will control leafhoppers.	7
Potato Leafhopper	Avaunt 30WG	5-6 oz		14
	Actara 25WP	2 oz		35
	Thiodan 3EC	1 lb		21
	Phaser 3EC	1 lb		21
	Danitol 2.4EC	10.6-21.3 fl oz		14
Spotted Tentiform	Lannate 90SP	1/2 lb	A threshold level of two mines per leaf for second generation larvae (June to July) should be used to dictate the need for control. Control of third generation larvae (August) may be necessary on late-maturing cultivars if populations exceed four mines per leaf. Most orchards have high levels of parasitism by this time.	14
Leafminer	Spin Tor 2SC	4-8 oz		7
	Vydate 2L	2-4 pt		14
	Provado 1.6F	2 oz		7
	Actara 25WP	2 oz		35
	Danitol 2.4EC	10.6-21.3 fl oz		14

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Insect	Material and Formulation	Dosage of Insecticides/Acre	Remarks/Precautions	Days to Harvest
SECOND COVER AND LATER SPRAYS (cont.)				
Green Apple Aphid	Provado 1.6F	1-2 oz	Threshold level for green apple aphid is 50 percent infested terminals. Control is most important on young trees and in dwarf plantings.	7
	Actara 25WP	2 oz		35
Woolly Apple Aphid Leafhoppers	Admire Pro	10.5-14 fl oz	Aboveground infestations are of greatest concern for younger trees. Do not apply Admire Pro pre-bloom or during bloom when bees are foraging.	7
European Red Mite Twospotted Spider Mite	Abba 0.15 EC + 1 qt horticulture spray oil in 100 gal	2.5-5 fl oz	Apply before mites reach >5 mites per leaf. Follow a 21-day minimum interval between applications of Abba. Do not exceed 40 fl oz Abba per acre per season.	28
	Acramite 50 WS	0.75-1.0 lb	Allow only one spray of Acramite per season.	7
	Pyramite 60W	2.2 oz		
	Kelthane 35W	4-8 lb	Use a higher rate of Kelthane on large trees. Do not expect complete control with a single application of oil or sulfur. These materials must be applied multiple times for best results.	25
	Vendex 50W	1-2 lb		7
	Danitol 2.4 EC	16-21.6 oz	Applying a highly refined summer oil when mite populations are beginning to increase (first and second cover sprays) will help suppress European red mites. Do not apply Captan two weeks before or after an oil spray.	14
	Vydate 2L	2-4 pt		14
	Wettable Sulfur Summer oil	1.5-3.5 lb 1/2-1 gal		14
Japanese Beetle	Assail 30 SG	5.0-8.0 oz	Do not make more than 2 apps. per season at 14 day interval. Do not exceed 5.3 oz per season.	7
	Calypto 4 F	2-4 fl oz	Do not exceed 16 fl oz (0.5 lb ai) per acre per season.	30
Oriental Fruit Moth	Assail 30 SG	5.0-8.0 oz	See petal fall.	7
Codling Moth	Azinphosmethyl 50 W	1.5-2.0 lb	See petal fall.	21
Red Banded Leafroller	Biobit HP	0.5-1.0 lb	See petal fall.	0
Plum Curculio	Deliver	0.5-2.0 lb	See petal fall.	0
	Javelin WG	0.5-4.0 lb	See petal fall.	0
	Cyd-X	1.0-6.0 fl oz	See petal fall.	0
RED IMPORTED FIRE ANTS (ALL FIRE ANT BAITS) – Apply when ants are active and soil temperature is above 60 degrees F. Do not treat if rain is anticipated within 6 hours.				
Bearing Apples	Pyriproxyfen (Esteem)	2-4 T/mound 1.5-2 lb/A	Mound-to-mound treatment rate. Broadcast rate.	
	S - Methoprene (Extinguish)	3-5 T/mound 1-1.5 lb/A	Mound-to-mound treatment rate. Broadcast rate. This product is an insect growth regulator (IGR). Apply 3 to 4 weeks prior to harvest date of production area being treated.	
Non-Bearing Apples	Fenoxycarb (Award)	1-3 T/mound 1-1.5 lb/A	Mound-to-mound treatment rate. Broadcast rate. This product is an IGR.	
	Hydramethylnon (Amdro Pro)	2-5 T/mound 1-1.5 lb/A	Mound-to-mound treatment rate. Broadcast rate.	
	Pyridine (Distance)	1-4 T/mound 1-1.5 lb/A	Mound-to-mound treatment rate. Broadcast rate.	
	S - Methoprene (Extinguish)	3-5 T/mound 1-1.5 lb/A	Mound-to-mound treatment rate. Broadcast rate. This product is an IGR.	
	Pyriproxyfen (Esteem)	2-4 T/mound 1.5-2 lb/A	Mound-to-mound treatment rate. Broadcast rate.	