

GRAPE INSECT CONTROL – COMMERCIAL

Insect	Material and Formulation	Dosage of Insecticides/Acre	Remarks/Precautions	Days to Harvest
DORMANT				
Grape Scale	Flag vines that have live grape scale – See BUD SWELL for scale oil spray or PREBLOOM TO BLOOM for timing grape scale crawler spray.			
BUD SWELL				
Climbing Cutworm	Superior oil	4 gal	Spray trunk and all wood of scale-infested vines by bud swell.	
Grape Scale	(70 sec viscosity)		During bud swell, scout at least twice weekly for holes in buds or inspect buds after dusk for presence of cutworms. Spray weekly as long as there is more than 1% new bud damage.	3
Flea Beetle	Baythroid 2E	2.4-3.2 fl oz	Flag scale infested vines and spray during crawler period (see PREBLOOM TO BLOOM).	21
	Danitol 2.4EC	5 1/3-10 2/3 fl oz		3
	Renounce 20WP	3-4 oz		7
	Sevin 80S	2.5 lb		
BUD BREAK				
Flea Beetle	SEE BUD SWELL			
Climbing Cutworm				
Mealybug	Admire Pro	10.5-14 fl oz	Surface application followed by 0.25 inch of rain or overhead irrigation.	30
Leafhopper	Alias 2F	16-24 fl oz	Maximum Admire Pro allowed per season is 14.0 fl oz/A.	30
BY APRIL 1				
Initiate grape berry moth scouting program	Place 3 grape berry moth pheromone traps in trees adjacent to vineyard (overwintering site of grape berry moth) and check twice weekly to record first consistent moth emergence (mid April) = GBM biofix . Be sure to keep trap bottoms clean and replace lures monthly or every two months for long-life lures. After GBM biofix date, begin calculating number of daily degree days (DD) using base 47°F = DD = (maximum daily temperature + minimum daily temperature)/2 – 47 .			
PREBLOOM TO BLOOM				
Honeybees	Since insects do not pollinate grapes, there is no danger to honeybees at this time unless they are working on blooming weeds in the vineyard. Mow drive row before spraying grapes to eliminate blooms on weeds in drive row.			
Flea Beetle Larvae	SEE BUD SWELL			
	Check for presence of flea beetle larvae on leaves anytime between 4 to 10 inches of shoot growth and bloom.			
Rose Chafer	Assail 30 SG	2.5 oz	Check for rose chafer on clusters during and after bloom.	21
	Danitol 2.4 EC	10-2/3 lb		7
	Intrepid 2F	10-16 fl oz		30
	Sevin 80S	1 1/2-2 3/4 lb		3
BY MAY 15				
	Move grape berry moth pheromone traps into the vineyard interior.			
Grape Berry Moth	SEE SHATTER			
	Intrepid 2F	0.5-1.0 lb	Intrepid is an insect growth regulator that provides control on grape berry moth if first applied at initiation of grape berry moth hatch (200 to 300 DD) and reapplied 10 days later. Grape berry moth larvae usually hatch and feed on perimeter grape clusters from mid May to early June or from 400 to 800 DD since GBM biofix in April. Begin weekly inspections of 100 to 200 clusters in the perimeter and second row for new berry moth larvae tunneling under the berry skin (damaged berry skin appears pink to purple). Spray the perimeter vines in May to early June , if greater than 1% clusters damaged by berry moth.	0

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BY MAY 15				
Foliar Grape Phylloxera	Admire Pro Danitol 2.4EC Movento	7-14 oz 10 2/3-21 1/3 fl oz 6-8 oz	Phylloxera crawlers produce second generation foliar galls in May. These crawlers mature and produce additional generations of crawlers. By August, many leaves die due to 100 or more galls per leaf and defoliate vines of susceptible cultivars (Vignoles, Norton, Chambourcin, Cayuga White). Apply insecticide in May against grape phylloxera crawlers when you first see expanding terminal leaves on susceptible vines with a rash-like appearance (new leaf galls forming). For Admire Pro to be effective against grape phylloxera, it must be applied to soil around vines by late April to move systemically up trunk into leaves (see BUD BREAK).	30 21 7
Grape Scale Spider Mites	Malathion	2-2.5 pt	Grape scale crawlers can be detected by wrapping double-stick tape around scale-infested limbs beginning in early May. Weekly inspect the tape for yellow crawlers. Apply crawler spray at 10-day intervals as long as crawlers are detected. Spider mite flare-ups may occur due to road dust coating grape leaves.	3
Leafhopper Sharpshooters	SEE SHATTER Assail 30 SG	2.5 oz	Do not make more than two applications per season at 14-day interval.	7
SHATTER				
Grape Berry Moth (new hatched) Leafrollers	Biobit HP Deliver Javelin WG	0.5-1.0 lb 0.5-1.25 lb 0.25-1.5 lb	Biobit, Javelin and Deliver are OMRI approved for organic production for control of grape berry moth. Re-apply weekly as necessary. Javelin is also labeled for leafrollers.	0 0 7
Grape Berry Moth Rose Chafer Grape Curculio Japanese Beetle Leafrollers Leafhoppers Grape Mealy Bug Grape Rootworm	Actara Assail 30 SG Baythroid XL Baythroid 2E Brigade 2 EC Danitol 2.4 EC Imidan 70W Intrepid 2F Provado Solupak Renounce 20WP Sevin 80S	1.5-3.5 oz 2.5 oz 2.4-3.2 oz 2.4-3.2 oz 8-16 oz 10.6-21.3 fl oz 1 1/3-2 1/8 lb 4-8 fl oz 0.75-1 oz 3-4 oz 1 1/2-2 3/4 lb	Grape berry moth: Spray if greater than 1% of clusters damaged by grape berry moth. Leafhopper: Inspect leaves in four locations for white stippling by leafhopper. If stippled, inspect underside of 5 leaves on each of 5 vines in 4 locations for presence of leafhoppers. Spray if greater than five leafhopper nymphs found per leaf. Grape curculio: The legless larvae that feed in berries from mid-June into July. These larvae have recently attacked grape blocks receiving only a perimeter spray against grape berry moth. Actara has a 14-day minimum interval between applications. Do not make more than two applications per season at 14-day interval.	5 7 3 3 30 21 14 30 0 3 3
FIRST COVER TO VERASION				
Grape Berry Moth	SEE SHATTER		Second and third generations of grape berry moth hatch in mid to late June (1330 to 1700 DD) and after 2300 DD or after mid-July. Continue weekly inspections of 100 to 200 clusters in the perimeter and second row for new berry moth larvae tunneling. Spray whole vineyard if greater than 1% of clusters damaged by grape berry moth.	
Rose Chafer Leafhopper Grape Rootworm Grape Mealybug	Sevin 80S Sevin XLR Surround WP	2.5 lb 2 qt 25-50 lb	Leafhopper usually is not a problem in Arkansas. You can inspect underside of leaves weekly and spray if you detect more than 10 nymphs per leaf. Surround will prevent Japanese beetle defoliation but should be re-applied as often as needed to keep vines white washed, especially after a rain. Surround is OMRI approved for organic production.	3 3 0

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VERASION TO HARVEST				
Grape Berry Moth	SEE SHATTER	2-2.5 pt	Spray whole vineyard if greater than 1% of clusters damaged by grape berry moth.	
Japanese Beetle	SEE SHATTER		Continue weekly monitoring for insect pests. Apply insecticides as needed.	
Leafhopper	Sevin 80S	2.5 lb	Japanese beetle: This is a pest that was introduced to northwest Arkansas in the late 1990s and became an economic pest defoliating grapes and other fruits and ornamentals by 2002. Late June and July, Japanese beetles will defoliate most of the canopy of susceptible grapes on Norton, Vidal, Vignoles, Chambourcin, Cabernet Franc and others. Weekly insecticide sprays are required to prevent foliar damage. Surround Crop Protectant is a kaolin clay approved by OMRI for organic production. It is sprayed on vines as a whitewash that protects vines from Japanese beetle damage. Surround must be reapplied to keep all foliage whitewashed and protected.	
Grape Mealy Bug	Sevin XLR	2 qt		
	Surround WP	25-50 lb		
Green June Beetle	Sevin 80S Sevin XLR	2.5 lb 2 qt	In July and early August, green June beetles will feed on and damage ripening fruit. Apply spray in July when first beetles enter the vineyard. Reapply as needed (weekly).	3 3
Grape Root Borer	Lorsban 4E	4 1/2 pt/100 gal water	Use to control the pest just prior to adult emergence from the soil or new larvae entering soil. Apply Lorsban to the soil surface in a 1- to 2-foot band on either side of the vine. Do not allow spray to contact fruit or foliage. Make one application per season by 35 days pre-harvest or after harvest.	35

GRAPE BERRY MOTH – MATING DISRUPTION STRATEGY: Mating disruption strategy requires good insecticidal control of the first generation in early to mid-May. In mid-May set out ISOMATE GBM PLUS* at minimum of 200 dispensers per acre or **maximum of 400 dispensers per acre must be applied to high-risk vineyards**. The pheromone is slowly emitted from plastic twist-ties for about 150 days in the warmer southern states. The atmosphere of the vineyard becomes saturated with the GBM pheromone odor. Male moths become confused so they are unable to locate and mate with females. Females are unaffected by the pheromone but lay unfertilized eggs that will not hatch. **To ensure a low GBM population, apply two insecticide sprays against first generation grape berry moths in mid- to late May. This strategy should be considered only for vineyards that are at least 5 acres in size.**

*ISOMATE-GBM, manufactured by Shin-estu Chemical Co., and distributed by Pacific Biocontrol. This product is available from Great Lakes IPM, Vestaburg, Michigan (phone 989-268-5693 or 800-235-0285).