

Fruit and Nuts – Commercial

Strawberry Spray Guide				
Insect	Insecticide and Formulation	Rate/50 Gallons	Cutoff Date	Restrictions or Limitations
Aphids	Admire Pro	1.3 fl. ounces/acre	7 days	Allow 5 days between applications. Toxic to bees; do not apply during bloom. Use spreader sticker to improve coverage. Apply before heavy infestations get established. Limit 3.9 fluid ounces/acre per crop season.
	Malathion 5 pounds EC	1.0-1 ½ pints	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
	Malathion 25% WP	3 pounds	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
Armyworms	Carbaryl 4L	1-2 quarts/acre	7 days	A dilute spray of 100-200 gallons/acre is suggested. Read label for susceptibility of some varieties; highly toxic to bees. Repeated use may cause spider mite problems.
	SpinTor 2SC	4-6 fl. ounces/acre	1 day	SpinTor is toxic to bees exposed to treatment within three hours of spray; toxic to aquatic invertebrates. Rotate product after two continuous applications. Limit to 29 fl. ounces/ acre/season. See preceding remarks on SpinTor.
Fire ants	Extinguish IGR	1.0-1.5 pounds/ acre		Apply to row middles in April when ants are actively foraging and in October prior to cool weather. Do not allow contact with fruit. Do not use when soil is too wet.
Lygus bugs and leafhoppers	Malathion 5 pounds EC	1.0-1 ½ pints	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
	Malathion 25% WP	3 pounds	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
Lygus and tarnished plant bugs	Brigade WSB	24 fl. ounces/ acre (3 soluble bags)	0 days	Highly toxic to bees and extremely toxic to fish and aquatic invertebrates. May not be used if endangered species could get in contact with treatment. Read label. Consult local agents.
	Danitol 2.4 EC	10 ⅔ fl. ounces/acre	2 days	Allow 30 days between treatments. Use only when mite populations are low. Add spreader sticker. Limit to 2 applications/year
Snails and slugs	Metaldehyde bait		Per label	Apply to soil around plants. Do not contaminate edible parts. Toxic to dogs and cats.
Spittle bugs	Malathion 5 pounds EC	1.0-1.5 pints	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
	Malathion 25% WP	2-4 pounds	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
	Danitol 2.4EC	10 ⅔ fl. ounces/ acre	2 days	Allow 30 days between treatments. Use only when mite populations are low. Add spreader sticker. Limit to 2 applications/year
	Carbaryl 80% S	1 ¼ pounds	7 days	A dilute spray of 100-200 gallons/acre is suggested. Read label for susceptibility of some varieties; highly toxic to bees. Repeated use may cause spider mite problems.
Strawberry leaf rollers	Carbaryl 80% S	1 ¼ pounds	7 days	A dilute spray of 100-200 gallons/acre is suggested. Read label for susceptibility of some varieties; highly toxic to bees. Repeated use may cause spider mite problems.
	Malathion 5 pounds EC	1.0-1 ½ pints	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
	Malathion 25% WP	3 pounds	3 days	Toxic to fish and highly toxic to bees. Observe label. Do not use when cyclamen mites are a problem.
	SpinTor 2SC	4-6 fl. ounces/acre	1 day	SpinTor is toxic to bees exposed to treatment within three hours of spray; toxic to aquatic invertebrates. Rotate product after two continuous applications. Limit to 29 fl. ounces/ acre/season.

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Strawberry weevils	Carbaryl 80% S	1 ¼-2 ½ pounds/acre	7 days	A dilute spray of 100-200 gallons/acre is suggested. Read label for susceptibility of some varieties; highly toxic to bees. Repeated use may cause spider mite problems.
Two-spotted mites	Acramite 50WS	0.75-1.0 pound/acre	1 day	See footnotes for important mite-resistance management plans. Effective mite control is better accomplished when treatments are conducted when mites first appear before populations build up. Each bag contains two water soluble bags of ½ pound each. Limit to 2 applications/season and a minimum of 21 days between applications.
	Agri-Mek 0.15 EC	16 fl. ounces/acre	3 days	Do not apply more than 64 fl. ounces/acre. Do not apply within 3 days of harvest. Allow 21 days between treatments.
	Danitol 2.4EC	16-21 ⅓ fl. ounces/acre	2 days	Allow 30 days between treatments. Use only when mite populations are low. Add spreader sticker. Limit to 2 applications/year.
	Insecticidal soap (M-Pede)	1 gallon	0 days	Thorough coverage needed.
	Savey 50DF	6.0 fl. ounces/ acre	3 days	Limit to 1 application/year. Apply as soon as mites are detected. Savey is predominantly an ovicide/larvicide and will not control adult mites.
	Vendex 50WP	6-8 fl. ounces (1 ½-2 pounds/acre)	1 day	Do not apply more than 2 times/season. Efficacy of Vendex is reduced when daily temperatures are below 70 F. Toxic to birds, mammals and fish.
	Zeal	2-3 fl. ounces/ acre	1 day	Apply when populations are low. Works better against eggs and larvae (immature mites). Limit to one application/season.

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Mite-resistance management plan	Repeated use of the same miticide is documented to result in rapid buildup of miticide-resistant strains of mites. To reduce the potential risk of developing resistant mite populations, miticides should be alternated as part of a mite-resistance management plan. If more than one application is needed to control heavy and prolonged mite infestations, always alternate with products of different modes of action. Observe the minimum required spray intervals and restrictions on amount of product and numbers of applications/area/season. Closely monitor mite populations to determine species, infestation levels and presence of predatory organisms. Use miticide sprays only when needed.
Recommended miticide rotation	If you follow this rotation of miticides, you should be able to decrease the spider mite population while conserving predatory mites. Scout for mites using a 10X hand lens before you spray. Treat when you see more than five mites per leaflet on young plants. A balance of natural control (predatory mites and other insects that eat the mites) and miticides is the best way to control mites. It may be possible that predatory mites can keep your mites in check, but only if you don't kill them by using a broad-spectrum product that will kill the predators. If you use the wrong product at the beginning of the season (e.g. Brigade), then the entire season could be worse because all the natural enemies were killed by that first spray. In general, mites can become a huge problem if they are sprayed on a schedule. We recommend rotating the following three miticides in the order they are listed.
	1. Acramite – limit to one application per season. This is a contact miticide, meaning that it kills mites that come into contact with the miticide. It also has long residual activity, so larvae that hatch out of eggs will also be killed from the first application.
	2. Agri-Mek – If mites are still present, apply this product 21 days after the acramite application. This is best when applied in a paired application; two applications spaced 7 to 10 days apart. This product moves in the leaf from the top to the bottom and will remain in the leaf for a period of time. It is less effective when used in cold weather because it does not move in the leaf as well as in warm weather. Combine Agri-Mek with a horticultural oil to help movement in the leaf except in extremely hot weather because the oil may burn the leaf. Do not exceed 16 fl. ounces/application or 64 fl. ounces (4 applications)/acre in

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	a growing season. Do not apply in less than 100 gallons water/acre (200 gallons/acre is optimal). Do not repeat treatment within 21 days of second application.
	3. Savey – This is a growth regulator that kills eggs, young nymphs (immature mites) and sterilized females. This should also be limited to 1 application per season.
	In general, be sure to include enough water to adequately cover your strawberry plants since most of these are contact miticides. It is important to make sure there is good spray coverage on your plants.
Note	Add a spreader sticker or liquid soap to spray mixture to obtain better coverage. Follow the manufacturer's recommendations.
Warning	Always wear appropriate personal protective equipment when handling and spraying pesticides. Re-entry times for workers entering treated fields should be strictly observed. Be sure to check the label for this information.