

Table 20. Strawberry pest management schedule[†].

Early Spring, Pre-bloom (New leaves are expanding and blossom buds are visible)			
Pest	Spray Material, Rate/A (pre-harvest interval)	Cultural Practices and Scouting Notes	Comments
Strawberry bud weevil (clipper)	*Lorsban 4E, 2 pt (21) Sevin 50WP, 2 - 4 lb (7) Sniper 50PVA, 1 lb (5) Brigade WSB, 6.4 to 32.0 oz (0) PyGanic EC 1.4, 16oz (0)	Spot treatments can be made if infestation is localized to field perimeter. See text on bud weevil above for details of scouting methods.	All of these insecticides are toxic to mite predators. Lorsban can only be used pre-bloom and is limited to two applications per season. Follow-up first spray with a second spray 10-14 days later.
Tarnished plant bug only	Dibrom 8EC, 1 pt (1) Sabadilla 0.8WP, 6 lb (0)	See text on tarnished plant bug for details of scouting and sampling methods.	Brigade , with 0 days to harvest (12 hr REI), and Dibrom , with only a 1 day harvest interval may be very useful for day neutral varieties.
Tarnished plant bug and/or Spittlebug	Thiodan 3EC, 1.3 qt (4) Phaser 3EC, 1.3 qt (4) Phaser 50WSB, 2 lb (4) Malathion 57EC, 1.5-3 pt (3) Cythion 8E, 1.5-2 pt (3) *Danitol 2.4 EC, 10 2/3 oz (2) Brigade WSB, 6.4 - 32 oz (0) PyGanic EC 1.4, 16oz (0)		Thiodan may not be applied more than twice in a 35 day period when fruit is present; you must wait 15 days between applications.
Spittlebug only	Guthion Solupak 50WP, 1 lb (5) *Sniper 50 PVA, 1 lb (5)	Suggested action threshold is 1 spittle mass per square foot of row.	Spittlebugs generally do not damage fruit but make them less appealing to pickers. Guthion has 48 hr REI for mowing, irrigating, and scouting; and 4 day REI for all other activities.
Two-spotted spider mite (TSSM)	Vendex 4 L, 1 pt (1) Kelthane 35WP, 1-3 lb (2) *Agri-Mek 0.15EC, 16 oz (3) Sunspray Ultra-Fine Oil, 1% (0) JMS Stylet Oil, 3 qts (0) Trilogy (Neem) 1-2% solution (0) Predatory mite release, rate varies (0)	Scout for presence of TSSM by randomly sampling 60 leaves from whole field. Treat field with miticide or release mite predators if TSSM are found on more than 25% of leaves sampled. Consult your Extension Specialist for help identifying mite predators and/or finding a source of predators for release.	Adjust spray volume and nozzle placement to assure maximum coverage of tops and undersides of leaves. Agri-Mek applied at a lower rate (6 oz.) selectively kills spider mites. The full rate (16 oz.) kills predatory mites. Sun Spray Ultra-Fine Oil and JMS Stylet Oil require direct contact to kill mites and their eggs. Spray oils at no less than 400 psi. Oils are phytotoxic in combination with captan or Morestan residues and should not be used in a spray program with Kelthane or within 14 days of a sulfur application.

Table 20 continued. Strawberry pest management schedule[†].

Early Spring, Pre-bloom (New leaves are expanding and blossom buds are visible)			
Pest	Spray Material, Rate/A (pre-harvest interval)	Cultural Practices and Scouting Notes	Comments
Leaf spot	Combine: Topsin-M 70WP, 8 oz (1)	Improve air circulation by narrowing row width, increasing distance between rows, and raising beds. This will allow faster drying after rain, irrigation, and dew.	Treatment not needed unless infection is severe. Fungicide applications for gray mold will usually manage leaf spots as well.
Leaf scorch			
Leaf blight			
	<i>plus</i> Captan 50WP, 3 lb (0) <i>or</i> Thiram 65WP, 3.5 lb (3)	Remove or thoroughly incorporate leaf debris from field at renovation. This helps disrupt the disease cycle of these fungi.	Captan has a 0 day phi, but the REI of 24 hrs requires that PPE be worn during this period.
	Or, use alone: Syllit 65W, 1.5 - 2 lbs. (14) Cabrio EG 12-14 oz (0)		
		Avoid excess Nitrogen application that promotes dense foliage and poor air circulation.	Syllit (dodine) must be applied with sufficient water (250-300 gal) for thorough plant coverage.
Red Stele	Ridomil Gold EC, 1 pt (0) Aliette WDG, 2.5 - 5 lb (0)		Early spring or fall applications are recommended for control of red stele. Use sufficient water to move the Ridomil into the root zone. There is no preharvest interval for this application.
Spring, Pre-bloom to Early-bloom (From bud expansion to 10% bloom)			
Tarnished plant bug (TPB)	Same as Early Spring, Pre-bloom treatments shown above	See text on tarnished plant bug for details of scouting and sampling methods.	DO NOT SPRAY INSECTICIDES DURING BLOOM. In case of an emergency, use only those materials listed as having low toxicity to pollinators. See Table 48 at end of guide on toxicity of pesticides to beneficial insects.
Anthracnose	Quadris F, 6.2-15.4 oz (0) Cabrio EG 12-14 oz (0) Captan 50WP, 6 lb (0) Thiram 65WP, 5 lb (3)	This disease is becoming more prevalent in many southern New England locations Quadris F may be applied no more than 4 times per year and must be alternated with a fungicide with a different mode of action. Quadris F will cause injury to McIntosh and other apple varieties if subject to drift or if the same sprayer is used. Use extreme caution to avoid crop damage to apples. Do not make more than two (2) sequential applications of Cabrio EG before alternating to a non-strobilurin fungicide with another mode of action. Captan has a 0 day phi, but the REI of 24 hrs requires that PPE be worn during this period.	

Pest	Spray Material, Rate/A (pre-harvest interval)	Cultural Practices and Scouting Notes	Comments
Botrytis gray mold	<p>combine either: Topsin-M 70WP, 8 oz (1) <i>or</i> Elevate 50WDG, 1.5 lb (0) plus Captan 50WP, 3-4 lb (0) <i>or</i> Thiram 65WP, 2.5 lb (3)</p> <p>or, use alone: Elevate 50WDG, 1.5 lb (0) Switch 62.5 WG, 11-14 oz (0) Captan 50WP, 6 lb (0) Stylet Oil, 3 qts. (0) Trilogy, 1-2% solution (0)</p>	<p>Improve air circulation by narrowing row width, increasing distance between rows, and raising beds. This will allow faster drying after rain, irrigation, and dew.</p> <p>Remove or thoroughly incorporate leaf debris from field at renovation. This helps disrupt the disease cycle of the Botrytis fungus.</p> <p>Avoid excess Nitrogen application that promotes dense foliage and poor air circulation.</p>	<p>Blossom protection is the most important component of successful Botrytis control. An early bloom application should be made at 10% bloom and followed up at mid and late bloom if conditions are wet.</p> <p>No more than 4 applications/year of Switch 62.5WG may be made. See label for other restrictions.</p> <p>Captan has a 0 day phi, but the REI of 24 hrs requires that PPE be worn during this period.</p> <p>Neither Elevate nor Topsin-M should be used alone for season long control of Botrytis to avoid developing resistance. Do not apply more than 6 lbs of Elevate per acre per season.</p>
Thrips	SpinTor 2SC, 4-6 oz (1)	See text for scouting information.	

Full-bloom (From 10% bloom until no blossoms remain)

Tarnished plant bug (TPB)	No spray - may be lethal to pollinators	Do not mow hay or alfalfa in adjacent fields if possible since this will encourage plant bugs to move into strawberry field.	DO NOT SPRAY INSECTICIDES DURING BLOOM
Botrytis gray mold	Same as Spring, Pre-bloom to early-bloom treatments above	See above.	See above.

Early Summer (Fruit-set to harvest)

Tarnished plant bug (TPB)	Same as Early Spring, Pre-bloom treatments shown above	See text on tarnished plant bug above for details of scouting and sampling methods.	
Sap beetle	Malathion 57EC, 1.5-2 pt (3) Cythion 8E, 1.5-2 pt (3) *Brigade WSB, 6.4-32 oz (0) PyGanic, 16oz (0)	Bait baskets with overripe fruit or balls of bread dough at intervals around edges of field to catch beetles as they migrate in. Brigade can be applied up to 12 hrs before harvest.	
Spittlebugs	Dibrom 8E, 1 pt (1) Thiodan 3EC, 1.3 qt (4) Guthion Solupak 50WP, 1 lb (5) *Sniper 50 PVA, 1 lb (5) *Danitol 2.4EC, 10 2/3 oz (2) *Brigade WSB, 6.4 - 32.0 oz (0)	Suggested action threshold is 1 spittle mass per square foot of row.	<p>Spittlebugs generally do not damage fruit but make them less appealing to pickers.</p> <p>See note on Thiodan under tarnished plant bug comments.</p> <p>Guthion has 48 hr REI for mowing, irrigating, and scouting; and 4 day REI for all other activities.</p>

Table 20 continued. Strawberry pest management schedule[†].

Early Summer (Fruit-set to harvest)			
Pest	Spray Material, Rate/A (pre-harvest interval)	Cultural Practices and Scouting Notes	Comments
Botrytis gray mold	Same as Spring, Pre-bloom to early-bloom treatments above	Do not allow fruit to become over-ripe. Harvest regularly. Spray only if weather is wet or very humid during this period to control secondary infections.	If good coverage was made during bloom, further fungicide applications may not be needed. Pay strict attention to re-entry periods and harvest intervals for materials used.
Anthraco	Same as Spring, pre-bloom to early bloom	See Spring, pre-bloom to early bloom.	See Spring, pre-bloom to early bloom.
Leather rot	Ridomil Gold EC, 1 pt (0) Aliette WDG, 2.5 - 5 lb (0)	Make sure to maintain a good mulch layer around plants to reduce puddling and splashing around plants from rain or irrigation.	For control of leather rot apply Ridomil Gold during the growing season at fruit-set.
Leaf spot	No fungicides until after renovation	Fungicides are usually not applied at this time for leaf spot diseases. Materials used for Botrytis management should alleviate leaf spot symptoms until after renovation. Improve air circulation by narrowing row width, increasing distance between rows, and raising beds. This will allow faster drying after rain, irrigation, and dew. Remove or thoroughly incorporate leaf debris from field at renovation. This helps disrupt the disease cycle of these fungi.	
Leaf scorch			
Leaf blight			
Harvest (Within 4 days of harvest through harvest)			
Botrytis gray mold	Same as Spring, Pre-bloom to early-bloom treatments above.	Do not allow fruit to become over-ripe. Harvest regularly.	Fungicide applications at this time are for emergency situations. Good coverage at infection periods during bloom should make late season sprays unnecessary. Be sure to follow label instructions for both REI and PHI restrictions.
Anthraco	Same as Spring, pre-bloom to early bloom above.	See Spring, pre-bloom to early bloom above.	See Spring, pre-bloom to early bloom above.

Summer (Post-harvest)

Pest	Spray Material, Rate/A (pre-harvest interval)	Cultural Practices and Scouting Notes	Comments
Strawberry root worm; adult	*Guthion 50WP, 1 lb (5) Sevin 50WP, 2-4 lb (7)	Scout field for 'shot-hole' feeding injury on leaves. If found, look in duff around plants for small copper-colored beetle.	Apply post harvest only when foliar damage is noticed and beetles positively identified. Larvae feed on roots causing general loss of vigor and possible collapse of plant.
Root weevils (various species)	*Brigade WSB, 8-16 oz (0) <i>Steinernema</i> spp., 3 billion/A (0) <i>Heterorhabditis</i> spp., 1/2 - 1 billion/A (0)	Rotate to non-susceptible crop for 3 years. Plow under old beds as soon as possible to avoid spread of the insect to new beds. Adult beetles hide in the soil during the day and feed at night.	The highest rate (16 oz.) of Brigade is needed to obtain control of black vine weevil (best if applied at night). Apply nematodes in early- to mid-May or mid- to late-August as a band treatment. Application rates are given for the treated area. Irrigate prior to and following the nematode spray. Contact your local Extension Specialist information about obtaining biologicals.
Two-spotted spider mite (TSSM)	Kelthane 35WP, 1-3 lb (3) *Agri-Mek 0.15EC, 16 oz (3) Savey 50WP, 6 oz (3) Vendex 50WP, 1.5-2 lb (1) Sunspray Ultra-fine Oil 1% (0) Stylet Oil, 3 qts. (0) Trilogy (Neem), 1-2% solution (0)	Scout for presence of predator mite <i>Neoseiulus fallacis</i> ; release 5-10,000 per acre if TSSM population exceeds 2/leaf and no predators are found. Contact your local Extension Specialist for sources of predatory mites.	Consult your Extension Specialist for help identifying mite predators. Agri-Mek applied at a lower rate (6 oz.) selectively kills spider mites. The full rate (16 oz.) kills predatory mites. Savey 50WP may be used for only one application per year. Sun Spray Ultra-fine oil and Stylet Oil require direct contact to kill mites and their eggs. Oil is phytotoxic in combination with captan residues.
Cyclamen Mites	Thiodan 3EC, 2.6 qt (4) Kelthane 35WP, 4-6 3/4 lb (2)	Predator mites may be effective against cyclamen mites. Check source list in the back for suppliers.	High gallonage (400 gal/A), wetting agent and foliar agitation usually needed for satisfactory control.
Leafhopper	Malathion 57EC, 1.5 - 3 pt (3) Cythion 5E, 1.5 - 2.5 pts (3) Sevin 50W, 2-4 lbs (7)	Plants may be able to tolerate some of this injury without long-lasting damage.	Leafhoppers can infest new or old planting and symptoms show up especially well during runner production.

Table 20 continued. Strawberry pest management schedule[†].

Summer (Post-harvest)			
Pest	Spray Material, Rate/A (pre-harvest interval)	Cultural Practices and Scouting Notes	Comments
Aphid	Thiodan 50WP, 2 lb (4) Malathion 57EC, 1.5 - 3 pt (3) Cythion 5E, 1.5 - 3pts (3) Diazinon 50WP, 1 lb (5) Pyrenone Crop Spray, 12 oz (0)		Aphids are significant vectors of virus diseases. If virus spread is of concern, aphids should be controlled in the spring and fall when winged forms are building up. See note on Thiodan under tarnished plant bug comments.
Powdery Mildew	Topsin-M 70WP, 8 oz (1) plus Captan 50WP, 3-4 lb (0) Or, use alone: Stylect Oil, 3 qts. (0) Kumulus (sulfur), 5-10 lbs (0) Quadris, 6.2-15.4 oz (0)	Plant beds in such a way as to maximize the air circulation and drying of foliage.	Cultivars vary in their susceptibility to powdery mildew. Captan has a 0 day phi, but the REI of 24 hrs requires that PPE be worn during this period. Quadris may be applied no more than 4 times/year and must be alternated with a fungicide with a different mode of action. Do not use near apple tree or in a sprayer that is also used on apple trees or severe injury may occur on some apple varieties.
Leaf spot	Captan 50WP, 3 lb (0)	Improve air circulation by narrowing row width, increasing distance between rows, and raising beds. This will allow faster drying after rain, irrigation, and dew. Remove or thoroughly incorporate leaf debris from field at renovation. This helps disrupt the disease cycle of these fungi.	Fungicide applications for gray mold will treat leaf spots as well. Captan requires protective clothing be worn in field for 24 hrs following application.
Leaf scorch	Thiram 65WP, 2.5 lb (3)		
Leaf blight	Kocide 101, 2-3 lb (0) NuCop 3L, 1 1/3 - 4 pts (0)		
Red Stele	Ridomil Gold EC, 1 pt (0) Aliette WDG, 2.5 - 5 lb (0)	Proper site selection and preparation to avoid prolonged periods of "wet feet" should be the primary control strategy for this disease.	Early spring or fall applications are recommended for control of red stele in emergency situations only. Use sufficient water to move the Ridomil Gold into the root zone. There is no preharvest interval for this application. Routine or preventative application of these materials is not recommended.

[†]Where brand names for chemicals are used, it is for the reader's information. No endorsement is implied, nor is discrimination intended against products with similar ingredients. Please consult pesticide product labels for rates, application instructions and safety precautions. Users of these products assume all associated risks.

*Restricted use pesticide; pesticide applicators license required.