

Spray Schedule for Fruit Trees, Shrubs, & Vegetables April 2019



| LATE WINTER: Crop & Disease, Pest or Condition | Use | Procedure | Spray Freq | Target Date | Actual Dates |
|--|----------------------------|--|-------------|-------------|--------------|
| All fruit trees except apricots and Bali cherry (copper) plus Hawthorne in front, Buckthorn in side yard. | (Lime) sulfur ¹ | Spray for apple cedar rust: apple, Hawthorne, buckthorn, when crabapple flower bud tissue can be seen. Remove the galls from junipers when these appear. | First spray | Mar 15 | |
| Fruit shrubs: gooseberries, currants, blueberries (phomopsis), juneberries, but not Goliath & Laxton Giant which are sulfur-shy. Use copper. | (Lime) sulfur | For powdery mildew, other fungi | Once | Mar 15 | |
| | Copper | Spray for apple cedar rust. | Once | Mar 15 | |
| Grape (black rot, powdery mildew). | Copper | Spray on grapes for pm, black rot, as an alternative to Lime sulfur. | Once | Mar 15 | |
| All lilacs, damask rose | Copper/sulfur | For powdery mildew at bud stage. | Once | Mar 15 | |
| Pears, hawthorn – fireblight | Copper | Spray. Over-spraying can cause copper toxicity.. | 5-12x | Mar 15 | |
| Peaches (scale); pears (pear blister mite); Nanking cherry (scale) | Hort oil | Spray just before buds open but at least 10 days after sulfur | Once | Mar 25 | |
| Currant fruit flies and currant cane borers (also on gooseberries) | Pruning | See note ² | | | |

¹ **Lime sulfur** is not available in many states. We use a liquid sulfur emulsion such as Safer Garden Fungicide (concentrate or spray)

² **Currant fruit flies** emerge about the time currants or gooseberries are in bloom. The females lay eggs in developing berries. These hatch into maggots that feed inside the berries. Affected fruits ripen prematurely and may drop to the ground. A small white maggot will be found in each infested berry. Direct your control measures toward the adult flies.

Currant borers can cause serious damage to currants, and to some extent gooseberries. Adult moths lay eggs in the axils of leaves. The young larvae bore into the center of the shoot and feed there. The following spring, affected shoots often leaf out late, are sickly, and may die. When you cut an injured shoot, you can see a dark hole where the larva has tunneled in the center. When you prune, remove canes below the tunneling and destroy them. Follow recommended pruning practices and don't let canes become too old.

| SPRING: Crop & Disease, Pest or Condition | Use | Procedure | Spray Freq | Target Date | Actual Dates |
|---|-----------------------------|---|--------------------------------------|--|--------------|
| Scab on apple, pear | Copper/Lime sulfur | Use against scab in late bud stage (1/2" green). | Once | Apr 1+ | |
| Aphids, mites, leafrollers on apple, pear, Bali cherry for leaf feeders, other cherries for cherry fruit fly (+ other fruit trees if damaged); juneberry; columbine sawfly larvae, marshmallow, hydrangea | Pyola | 1/2-3/4" green + after petal fall | 7-10 days in spring; later as needed | Apr 1+ May 15 | |
| Cedar-apple/hawthorne rust: both apples, hawthorne in front, buckthorn in side yard. On Laxton Giant and Goliath use copper | (Lime) Sulfur Copper | 2 nd spray for cedar-apple rust at petal fall. SPRAY BOTH SIDES OF LEAVES! (see p. 30, Scouting & Controlling Woody Ornamental Diseases) | | May 15 | |
| Eastern spruce gall adelgid. Pine trees (front + 2 new) | Pyola | Spray in <u>April</u> prior to budbreak, before females mature and start laying eggs. ³ | once | Apr | |
| Brown rot: peaches, plums, cherries; scab and pm on pears (Asian+European), apples | (Lime) sulfur | Spray during peak blossom. Then at 30, 60, and 90 days after | Initial, 30,60,90 days | Apr 20 May 20 June 20 July 20 | |
| Scab on peaches | Sulfur | Spray entire tree at peach shuck stage | Initial; 10-14 days until July 1 | May 1+ | |
| peas-ascochyta blight | Copper first, then Serenade | Spray w. strawberries. 1 gal mix does both. Every 7-10 days. Spray strawberries first, then add Palmolive for peas | 7-10 days to season end | May 1+ | |
| Strawberry grey mold | Copper first, then Serenade | Pick daily, use fan to promote air circulation, compost from lower pile. First grey mold 5/19/10. | 7-10 days | ~May 1 | |
| Iris leaf blight | Copper + Palmolive | Spray. Palmolive helps stick | 7-10 days | May 15 | |
| Fruit: spotted wing drosophila. Start trapping in April. | Trap | Build several using design at http://umaine.edu/blueberries/factsheets/insects/spotted-wing-drosophila-traps/ | Change bait 1-2X/wk | Apr 15 | |

³ For treating Eastern spruce gall adelgid, see file=Garden new 9-12/Eastern spruce gall adelgid.

| LATE SPRING - JUNE 22 Crop & Disease, Pest or Condition | Use | Procedure | Spray Freq | Target Date | Actual Dates |
|---|--|---|---|--------------------------------------|-------------------------|
| Bali cherry- check for leaf damage and repeat Pyola spray | Pyola | Spray as per directions, spray 10 days before copper spray for coryneum blight | Once | May 10 | |
| Beets-cercospora blight ⁴ | Copper w Palmolive +pot bicarb Companion | 4 prophylatic sprays within 24 days, roughly weekly starting 41 to 59 days after planting. This translates to starting May 11 to May 28 | Weekly | May 11 May 18 May 27 June 4 | |
| Bali cherry-coryneum blight | Copper w Palmolive | Spray. Late winter spraying should have helped to prevent this. Spray now between petal fall and shuck fall | Once | May 20 | |
| Tomato seeds | Anti-oxidant | Increase yields ⁵ | Once at planting | May 19-26 | |
| Gooseberries, columbine, elderberry stem borer and sawfly larvae | Pyola or hort oil | Monitor currant sawfly larvae! Spray at outbreak, and then 3-4 days later! Spray weekly thereafter. | 3-4 days, then weekly | ~May 15 | |
| Powdery. mildew on lilacs, peonies, sweet pea, rose, lungwort, lysimachia, Bali cherry, squash, zinnias | Spray | 1. Palmolive detergent + sodium bicarbonate! Use 1t/gallon soap, with 2t/gal baking soda. 2. Hort oil 3. 1 pt milk + 1 T baking soda + water to make 1 gallon mix. Both leaf sides. | Every 2 weeks!! 1/month 2x/week | Early June | |
| Juneberry | Copper + Pyola | Spray with fungicide and insecticide as fruit ripens (Reich, p. 16). Oikos says to spray with Neem. As members of rose family, juneberries can get fireblight. | Once | mid-June | |
| Eastern spruce gall adelgid galls (front pine plus 2 new) | Prune | During June or July, prune and destroy green-colored galls before they open, (before adults emerge); this works for light infestations on a few small trees. | Once | June-July | |
| Fruit: spotted wing drosophila. Start trapping in April. | Trap | Build several using design and info at: https://extension.unh.edu/resource/monitoring-spotted-wing-drosophila-swd-traps See also Garden new files | Change bait 1-2X/wk | Jun 25 | |

⁴ Requires spray before disease appears as a protectant and multiple sprays after. Two products together double disease reduction from 25% to 50%. Two products are Copper octanoate (M1) + B amyloliquefaciens strain D747, available from Certis at the rate of 4.7 and 2.3 liters/ha. Applied in the following Days After Planting (DAP): Trial 4 in Geneva, NY (59,67,77,84), and Trial 5 in Ithaca (41,48,57,64). This is 4 sprayings within 23 days! Ref: <https://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS-04-17-0528-RE>. Certis product and Regalia expensive. Try potassium bicarbonate. Biopesticides may improve resistance (e.g., Serenade/Companion, Regalia).

⁵ Seedling shoot dry mass production relative to that of untreated controls was increased by 56% after soaking the seeds (24 hrs at 77 F) in a solution of 1.0 milligram of ascorbic acid per liter of water; by 83% with 0.1 milligram of lycopene per liter; and by 94% with 1.0 milligram of lutein per liter. Use small amount of alcohol to dissolve lycopene, lutein. Hort Ideas Nov 09. Can use beta carotene, too.

| LATE SPRING - JUNE 22 Crop & Disease, Pest or Condition | Use | Procedure | Spray Freq | Target Date | Actual Dates |
|---|---------------------------------|---|---------------|------------------------------|-----------------|
| Pests on vegetables, flowers For ants: | Spray → Spray → | <u>Karl Davidson</u> uses a simple spray vs a wide variety of pests: 1-2T castile soap (Dr. Bronners) per quart of water for cabbage moth, squash bug, cucumber beetle, others. The soap breaks down oily protective layer and insects suffocate. <u>Against slugs</u> he uses 10% ammonia solution – in a spray bottle. Mix 2 T dish detergent/pint water. Spray to eliminate trails, ants. Thom: honey+boraxo, in soda caps. | As needed | 7/1; check weekly thereafter | |
| Cucumbers | Row cover (tulle or tutu cloth) | “Our preliminary data showed that striped cucumber beetles ... wilt were ... suppressed, by 31%, with the use of row covers removed at flowering and by 44% by removing row covers 10 days after the start of flowering compared to not using row covers (control).” Vegetable & Small Fruit Gazette, March 10, 2013 | Once | At transplanting cukes! | |

| SUMMER: Crop and Disease, Pest or Condition | Use | Procedure | Spray Freq | Target Date | Actual Dates |
|---|--|--|------------------|--|--------------|
| Brown rot of peaches, plums, cherries; scab of peaches Ants on fruit tree trunks | Lime sulfur, copper soap. Serenade | Spray: 1 gallon mix per tree. Serenade didn't seem to help in 2011 Add duct tape with tanglefoot/vaseline | Replace 1x/mo | Jun 20 July 20 July 1 Aug 1 | |
| Leaf spot gooseberries (anthracnose, septoria) | Copper | Spray. See Reich, p. 129 | Once | July 1 | |
| Grapes | Black rot | Pick diseased fruit, then spray w copper +. Palmolive if needed to stick (1 gal) | 1x/mo | July 1 Aug 1 | |
| Peaches | Horse-radish tea | Another remedy (brown rot of apples) might work for peaches. ⁶ | | | |
| Apples, pears | Serenade | Scab on apples, fireblight on pears | 30 day intervals | Jun 20 July 20 | |
| Lily of valley: fungus | Copper | Add soap to stick | Every 2 weeks | July 1 July 15 July 29 Aug 12 | |
| Powdery mildew on kale, squash, collards; Bali cherry lilacs, peonies, swt pea, rose, lungwort, lysimachia, zinnias | Palmoliv+ bak soda; Hort oil ornamentl | Spray; can also use H ₂ O ₂ (2T H ₂ O ₂ , 4T vinegar/qt + soap if necessary) Spray | 7-10 days | Jun 20+ | |
| Basil blight | H ₂ O ₂ | Spray. top and under leaves, stems. To 1 pt water add 1T H ₂ O ₂ , 2T vinegar + drop dish soap if necessary so it sticks. | 1-2x/wk+ >rain | July 1 + | |
| ↑ yield Peppers | Aspirin (2 qts) | Spray ⁷ ⁸ | After flowering | July 6 July 16 | |
| Check for white pine blister rust on 2 currants and gooseberry in bed 15 | Try copper. | Spray. Two currants are sulfur-shy, so Lime-Sulfur cannot be used. | 7-10 days | July 17 | |
| Late blight on tomatoes, ashwaghandha | Serenade | For late blight, early blight. Sprayed in 2010 on 7/17 for early blight | Weekly | July 17 | |
| Killing weeds. Kills plantain (but will kill grass, too!) | Vinegar | Lee Reich: vinegar (5% acetic acid) effective against grasses and broad-leaved weeds, made more potent by adding 2T canola oil and 1T dish detergent per gallon of brew. Spray is most effective above 70 deg. Internet: 1 g vinegar, 1 c salt, 1T soap | Two-four passes | July 17 | |
| Tomato leaf mold-two beds | Serenade | Spray both sides of leaves | 7-10 days | Aug 18 | |

⁶ Good antifungal spray. The white flesh of the horseradish root also contains significant amounts of calcium, magnesium and vitamin C. To make: Whir one cup of roots in food processor till finely chopped. Combine w. 16 ounces of water in glass container and let soak for 24 hours. Strain liquid, discard the solids. Mix the liquid with 2 quarts of water, spray.

⁷ After flowering, spray with distilled water containing a surfactant and tiny (signal) amounts of salicylic acid (10-6 millimolar solution) in the morning on all of the leaves, three times within a period of two weeks. This is 0.4 of a 325 mg aspirin tablet in 1 L distilled water. Each plant received about 50 milliliters of spray (x 12 plants = 600 ml or ~ 2 ½ cups). Relative to control, plants receiving sprays averaged ~ 80% higher yields, and higher Vit C. From Hort Ideas, Nov. 09

⁸ <http://answers.yahoo.com/question/index?qid=20080312063917AAjhmGi>

| FALL: SEPT 22 & AFTER Crop and Disease, Pest or Condition | Use | Procedure | Spray Freq | Target Date | Actual Dates |
|--|---|---|-----------------------|--|-------------------------|
| Eastern spruce gall adelgid (Front and 2 new trees) | Pyola | To manage overwintering life stages of this pest, apply registered insecticides (or horticultural oil) according to label directions from mid-Sept through early October. | Once | Sept 22 | |
| Post-season spray on fruit trees: Patryk Battle at http://livingwebfarms.org/ | Compost tea with 10% molasses | Friendly bacteria eat the sugar in a feeding frenzy, and then turn to the pathogenic organisms. | Once | late Sept. | |
| Coryneum blight on cherry | Copper | spray to protect new buds | Once | at 50% leaf fall | |
| Phomopsis of blueberries | (Lime) sulfur | spray (1 qt does our 6 small shrubs) | Once | Just after leaf fall | |
| Pear blister mite: pear + apples, mountain ash, hawthorn, service berry, quinces | (Lime) sulfur, then Dormant oil (4T/g) | Spray from leaf fall to start of egg laying. Pick a warm day. Root zone should be wet from rain, watering. Apply late morning when dew/rain has dried (see "pear blister mites" on bookmarks). (1.5 gal) | Once | 3 rd wk Nov. 4 th week Nov. | |