

FRUIT TREE DISEASES (Commercial)

Sherrie Smith

| Growth Stage | Disease | Product | Active Ingredient | FRAC Code* | Rate/100 gal | Rate/Acre | Comments |
|-----------------------|---|------------------|----------------------|------------|--------------|-------------------------------|--|
| APPLE | | | | | | | |
| Dormant to Silver Tip | Fire blight | Bordeaux Mixture | basic copper sulfate | M1 | | | Dissolve 8 lbs copper sulfate in 50 gals water; add 8 lbs spray lime with agitation and more water; add 1 gal miscible superior oil last but prior to complete fill; add water with agitation to 100 gals; spray with constant agitation. Do not mix with other pesticides or spray when drying conditions are slow or after 1/4 inch green as severe injury may result. |
| | | Kocide 101 | copper hydroxide | M1 | 2 - 4 lb | 8 - 16 lb | |
| | | Kocide 2000 | copper hydroxide | M1 | 2 - 4 lb | 6 - 12 lb | |
| | | Kocide 3000 | copper hydroxide | M1 | 0.5 pt | 3.5 - 7 lb | Make application between silver tip and green tip. Apply as a full cover spray for early season disease suppression. NOTE: Moderate to severe crop injury may occur from late application; discontinue use when green tip reaches 1/2 inch. |
| | Phytophthora crown, root and collar rots | Ridomil Gold EC | mefenoxam | 4 | | 2 qt or 1.5 fl oz/1,000 sq ft | Applications should be made in early spring before growth starts and in the fall after harvest, but before the ground freezes. |
| | | Aliette WDG | aluminum tris | 33 | 3 lb | Root dip – new plants | Dip the entire root system for 30 - 60 minutes prior to planting in the field. |
| | | | | | 2.5 - 5 lb | Foliar | Apply at a 30 - 60 day interval when conditions favor disease development. See label. |
| Green Tip | Scab | Syllit FL | dodine | U12 | | 1.5 - 3 pt | Refer to label for resistance management and application guidelines. See label. |
| | | Scala SC | pyrimethanil | 9 | | 7 - 10 oz | See label. |
| | Scab, cedar apple rust, quince rust, sooty blotch, flyspeck, bitter rot, necrotic leaf blotch | Ziram 76DF | ziram | M3 | 1.5 - 2 lb | 6 - 8 lb | Apply from pre-bloom through cover sprays as needed. Under severe disease pressure use the higher rate. Do not apply within 14 days of harvest. |
| | Scab, cedar apple rust, quince rust | Polyram 80DF | EBDC | M3 | 1.5 lb | 6 lb | Begin application at 0.25 - 0.5 inch green tip and continue at 7 - 10 day intervals. Do not apply Polyram 80DF after bloom. |

(continued)

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| APPLE (cont.) | | | | | | | |
| Green Tip <i>(cont.)</i> | Scab, cedar apple rust, quince rust, powdery mildew | Eagle 20EW | myclobutanil | 3 | 4 - 6 oz | See label. | Begin at green tip. Do not apply within 14 days harvest. For rust, begin applications at pink stage and continue through the second cover spray. For powdery mildew, begin application at tight cluster and continue through the second cover spray. |
| | Scab, cedar apple rust, quince rust, powdery mildew | Rubigan EC | fenarimol | 3 | 3 fl oz | 8 - 12 fl oz | Do not apply within 30 days of harvest. |
| | Scab, powdery mildew, cedar apple rust | Procure 50WS | triflumizole | 3 | 3 - 4 oz | 12 - 16 oz | Begin applications at 1/4 to 1/2 green tip. Spray on a 7 - 10 day schedule as needed. See label. |
| | Scab | Vanguard 75WG | cyprodinil | 9 | | 5 oz | |
| | Scab, cedar apple rust, quince rust, powdery mildew, sooty blotch, fly-speck, bitter rot, white rot | Flint 50WG | trifloxystrobin | 11 | 1 - 1.6 oz | 2.5 oz | Begin applications preventively. Continue applications as needed on a 10 -14 day interval. See label for white rot and bitter rot. |
| | | Adament 50WG | tebuconazole + trifloxystrobin | 3 11 | | 4 - 6 oz | |
| | Scab, powdery mildew, frogeye leaf spot, alternaria blotch, Brooks fruit spot, flyspeck, sooty mold, white rot, black rot, cedar apple rust (suppression) | Sovran 50WG | kresoxim-methyl | 11 | | 3.2 - 6.4 oz | Begin at 1/2 inch green and repeat at 7 - 10 day intervals depending on the rate of shoot growth and level of disease pressure. See label for complete directions. |
| | Fabrea leaf spot, rusts, scab | Dithane F-45 Rainshield | EBDC | M3 | | 4.8 qt | Begin applications at 1/4 - 1/2 inch green tip and continue on a 7 - 10 day schedule through bloom. |
| | Alternaria blotch, scab, bitter rot, black rot, Brooks spot, flyspeck, pear scab, powdery mildew, sooty blotch, white rot, cedar apple rust (suppression), quince rust | Pristine | pyraclostrobin + boscalid | 11 7 | | 14.5 - 18.5 oz | See label. |

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| APPLE (cont.) | | | | | | | |
| 1/2" Green Tip | Scab | Same as Green Tip | | | | | Rotate fungicides for resistance management according to label. |
| Tight Cluster | Scab, powdery mildew | Same as Green Tip | | | | | Some materials listed in Green Tip are not labeled for powdery mildew. See label for the most effective material(s). |
| Pink | Scab, powdery mildew, rust | Same as Tight Cluster | | | | | Critical time for control of these diseases. Some of the materials listed are not labeled for powdery mildew. Follow label information. |
| Bloom | Scab, powdery mildew, rust | Same as Pink | | | | | |
| | Fire blight | Agrimycin 17 | streptomycin sulfate | 25 | | 12 - 48 oz | Apply at first sign of blossoms and repeat on a 5 day schedule through petal fall on susceptible varieties. Warm, wet weather during bloom favors the disease. |
| | | Firewall | streptomycin sulfate | 25 | | 24 - 48 oz | Spray trees every 3 - 4 days during blossom time. Apply sprays after petal fall every 10 - 14 days to control twig blight. (This could mean an additional 6 - 8 applications after blossom sprays.) Do not apply within 50 days of harvest. |
| Petal Fall | Scab, powdery mildew, rust, fire blight | Same as Bloom | See label. | | | | |
| First and Second Cover Sprays | Scab | Nova 40WP or | myclobutanil | 3 | 1.25 - 2 oz | 5 - 8 oz | |
| | Powdery mildew | Bayleton 50DF or | triadimefon | 3 | 0.5 - 2 oz | 2 - 8 oz | |
| | Rust | Rubigan EC or | fenarimol | 3 | 3 fl oz | 8 - 12 fl oz | |
| | Fruit rots | Procure 50WS | triflumizole | 3 | 3 - 4 oz | 12 - 16 oz | |
| | | + Captan 50WP or Ziram 76DF | captan ziram | M4 M3 | 1.5 lb 1.5 - 2 lb | 6 lb 6 - 8 lb | |
| | Blister spot on 'Mutsu' or 'Crispin' | Agrimycin 17 | streptomycin sulfate | 25 | See label. | | |
| Third Cover | Scab | Captan 50WP or | captan | M4 | 1.5 lb | 6 lb | Topsin is needed for sooty blotch and flyspeck control but may lead to increased mite injury. Check the Topsin label for precautions. |
| | Fruit rots | Ziram 76DF | ziram | M4 | 1.5 - 2 lb | 6 - 8 lb | |
| | Sooty blotch Flyspeck | + Topsin-M 70WSB | thiophanate-methyl | 1 | 4 - 6 oz | 1 - 1.5 lb | |
| Summer Cover Sprays (10 - 14 day schedule) | Scab, fruit rot, sooty blotch, flyspeck | Same as Third Cover | | | | | |

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| PEAR | | | | | | | |
| Pre-Bloom | Pear scab | Ferbam 76WP | ferbam | M3 | 1.5 lb | 6 lb | |
| | | Rubigan EC | fenarimol | 3 | 3 - 4 fl oz | 8 - 12 fl oz | |
| | | Mancozeb 80WP | mancozeb | M3 | 0.75 - 1.5 lb | 3 - 6 lb | |
| | | Ziram 76DF | ziram | M3 | 2 lb | 6 - 8 lb | |
| | | Procure 50WS | triflumizole | 3 | 2 - 4 oz | 8 - 16 oz | |
| | | Sovran 50WG | kresoxim-methyl | 11 | 1 - 1.6 oz | 4 - 6.4 oz | |
| | | Flint 50WG | trifloxystrobin | 11 | | 2 - 2.5 oz | |
| | | Pristine | boscalid + pyraclostrobin | 7 11 | | 10.5 - 14.5 oz | PHI = 0 days. Maximum of 5 applications/season. See label for alternating fungicides with this product. |
| | | Adament 50WG | tebuconazole + trifloxystrobin | 3 11 | | 4 - 5 oz | |
| | | Scala | pyrimethanil | 9 | | 5 - 10 fl oz | |
| | | | | | | | |
| Bloom | Pear scab | Same as Pre-Bloom | | | | | |
| | Fire blight | Mycoshield | oxytetracycline sulfate | 41 | | | Mycoshield should be applied at 16 oz per 100 gal. |
| | | Flameout | oxytetracycline hydrochloride | 41 | 16 oz | | Begin spray application at 10% bloom at a rate of 50 - 100 gals of solution per acre. Repeat applications at 4 - 6 day intervals. See label. |
| | | Kocide 3000 | copper hydroxide | M1 | | 0.5 lb | Apply at 5 day intervals or as needed throughout the bloom period. |
| | Firewall | streptomycin sulfate | 25 | | 24 - 48 oz | Spray trees at 20% - 30% bloom. Spray trees every 3 - 4 days during blossom time. Apply sprays after petal fall every 10 - 14 days to control twig blight. Do not apply within 30 days of harvest. | |
| Petal Fall | Pear scab Fire blight | Same as Bloom | | | | | Continue fire blight sprays until the last petal falls. |
| First and Second Cover | Pear scab | Same as Pre-Bloom | | | | | |
| Summer Cover | Pear scab Sooty blotch Flyspeck | Same as Pre-Bloom but do not use Rubigan or Procure | | | | | |

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| PEACH and NECTARINE | | | | | | | | |
| Dormant | Peach leaf curl | Bravo | chlorothalonil | M5 | Label | Label | Apply after leaf drop but before bud swell in the spring. | |
| | | Ziram 76DF | ziram | M3 | 1.25 - 2 lb | 4 - 6 lb | | |
| | | Kocide 2000 | copper hydroxide | M1 | 4 lb | 8 - 16 lb | | |
| | | Kocide 3000 | copper hydroxide | M1 | | 3.5 - 7 lb | | |
| | Bordeaux Mixture | copper sulfate + spray lime | M2 | 6 lb + 6 lb | | Make first application before fall rains and a second at late dormant. For peach leaf curl, late dormant application must be made before leaf buds swell. | | |
| | Phytophthora collar and root rot | Aliette | aluminum tris | 33 | 5 lb | | Apply Aliette® WDG when conditions favor disease development and continue on a 60 day interval. Nursery tree resets and new plantings should be treated after leaf emergence. | |
| | | Ridomil Gold EC | mefenoxam | 4 | | 2 qt or 1.5 fl oz/1,000 sq ft | Applications should be made in early spring before growth starts and in the fall after harvest, but before the ground freezes. | |
| Pink | Brown rot | Nova 40WP | myclobutanil | 3 | 1.25 - 2 oz | 2.5 - 6 oz | Avoid the use of Abound around apple trees. Do not use the same sprayer for apples if Abound has been used on stone fruits. Read label for resistance management suggestions. | |
| | | Indar 75WSP | fenbuconazole | 3 | | 2 oz | | |
| | | Orbit 41.8L | propiconazole | 3 | | 4 fl oz | | |
| | | Propimax EC | propiconazole | 3 | | 4 fl oz | | |
| | | Rovral 50WP | iprodione | 2 | | 1 - 2 lb | | |
| | | Bravo WeatherStik | chlorothalonil | M5 | | 1 - 1 3/8 pt | | 3 - 5 pt |
| | | Captan 50WP | captan | M4 | | 1.3 lb | | 4 lb |
| | | Ziram 76DF | ziram | M3 | | 1.5 - 2 lb | | 4.5 - 8 lb |
| | | Abound 2.08 FL | azoxystrobin | 11 | | 12 fl oz | | |
| | | Pristine | boscalid + pyraclostrobin | 7 11 | | 10.5 - 14.5 oz | | |
| | | Gem 500SC | trifloxystrobin | 11 | | 1.9 - 3.8 oz | | |
| Adament 50WG | tebuconazole + trifloxystrobin | 3 11 | See label. | 4 - 8 oz | Apply at petal fall every 7 - 14 days. 7 - 10 day intervals. See restrictions. | | | |
| Scala | pyrimethanil | 9 | | 9 - 18 fl oz | | | | |
| Full Bloom | Brown rot | Same as Pink | | | | | | |
| Shuck Split | Brown rot Scab Powdery mildew | Same as Pink | | | | | Nova, Elite, Indar and Orbit are superior powdery mildew fungicides. Do not use Bravo after shuck split unless special labels are approved and available. | |
| | | Same as Pink | | | | | | |
| | | Same as Pink | | | | | | |
| | Bacterial spot | Mycoshield | oxytetracycline calcium | 41 | See label. | | | |
| | | Flameout | oxytetracycline hydrochloride | 41 | 12 oz | | Begin application with shuck split using a rate of 3 gallons per tree (240 gals spray solution per acre based on 80 trees per acre). Apply spray solution to point of runoff. | |

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| PEACH and NECTARINE (cont.) | | | | | | | |
| First Cover | Brown rot, scab, powdery mildew | Same as Pink | | | | | |
| Second Cover | Brown rot, scab, powdery mildew | Same as First Cover | | | | | |
| Additional Covers and Pre-Harvest | | Same as First Cover | | | | | |
| PLUM | | | | | | | |
| Dormant | Bacterial canker | Kocide 3000 | copper hydroxide | M1 | | 3.5 - 7 lb | Make first application before fall rains and a second at late dormant. |
| | Phytophthora collar and root rot | Ridomil Gold EC | mefenoxam | 4 | | 2 qt or 1.5 fl oz/1,000 sq ft | Applications should be made in early spring before growth starts and in the fall after harvest, but before the ground freezes. |
| | | Aliette (nonbearing) | aluminum tris | 33 | 5 lb | | Apply Aliette® WDG when conditions favor disease development and continue on a 60 day interval. Nursery tree resets and new plantings should be treated after leaf emergence. |
| Pre-Bloom | Brown rot | Captan 50WP | captan | M4 | 2.6 lb | 8 lb | See label information. Maximum of 5 applications/season. PHI = 0 days |
| | | Rovral 50WP | iprodione | 2 | 5 - 10.5 oz | 1 - 2 lb | |
| | | Orbit 41.8L | propiconazole | 3 | | 4 fl oz | |
| | | Pristine | boscalid + pyraclostrobin | 7 | | 10.5 - 14.5 oz | |
| | | Scala | pyrimethanil | 9 | 18 oz | | |
| | | Adament 50WG | tebuconazole + trifloxystrobin | 3 | 6 oz | | |
| | | Gem 500SC | trifloxystrobin | 11 | 1.9 - 3.8 fl oz | | |
| | | | | | | | |
| Full Bloom | Brown rot Black knot | Same as Pre-Bloom | | | | | |
| Petal Fall | Same as Full Bloom | Same as Pre-Bloom | | | | | |
| Shuck Split | Same as Full Bloom | Same as Pre-Bloom | | | | | |
| First Cover | Same as Full Bloom | Same as Pre-Bloom | | | | | |
| Second Cover through Pre-Harvest | Brown rot | Same as Pre-Bloom | | | | | |

***FRAC Code** – Fungicides with the same FRAC Code have the same mode of action. See <http://www.frac.info/frac/index.htm> for an explanation of the FRAC Codes. Rotation of fungicides with different FRAC Codes could minimize the development of fungicide-resistant strains.