

Royal Oak Farm Spray Program FOR 2009 SEASON – 03/12/09

STAGE	PEST AND MATERIALS	AMOUNT
Dormant to Silver Tip	Fire blight Copper Champ Flowable (copper hydroxide) Early-season copper applications may reduce inoculum of some other diseases.	6 pt. per acre
Green Tip To Quarter Inch Green	Fire blight Although late dormant or silver tip application of copper is preferable, if none was made it can be made at this time. Apple scab EBDC (Dithane) OR Captan 80WP..... OR Captan AND EBDC (Dithane) An EBDC fungicide may be used at this time as a choice for apple scab . Use at the lower rate label options (Extended Program). Dithane, Manzate and Penncozeb are trade names for the EBDC mancozeb, and virtually the same. Do not use Captan within 10 days of an oil application.	 5 lb/acre 5 lb/acre 2.5 lb/acre 2.5 lb/acre
Half-inch Green	Apple scab Options the same as at Green Tip and based on weather conditions, except DO NOT USE COPPER after Quarter Inch Green . Mites, Scale Superior Oil 70sec Oil timing based on pest pressure. Do not use Captan within 10 days of an oil application.	 2 gal. per 100 gal.
Notes		

Tight Cluster	<p>Apple scab When using Flint (Strobilurin) or an SI (Rally, Procure or Rubigan), be aware of resistance management limitations. Do not make back to back applications of Flint. Apply SI's with an EBDC as an option. Do not use SI's two seasons in a row. Do not apply any SI's or Flint more than four times per season as per the Protocol. Do not apply SIs if the orchard has known SI resistance or previous control failure with SIs. Do not use Captan within 10 days of an oil application.</p> <p>Flint 50WDG..... 0.67 oz. per 100 gal.</p> <p>OR A COMBINATION OF EITHER Rally 40WP..... 2 oz. per 100 gal.</p> <p>PLUS EITHER Dithane/Manzate/Penncozeb 75DF/80WP..... 1 lb. per 100 gal. (up to 3.2 lb/A max)</p> <p>Mites or San Jose Scale If needed Oil..... 1 gal. per 100 gal. Superior Oil should not be used after pink.</p>	
Pink	<p>Apple scab Same as Tight Cluster</p> <p>Mites If needed, same as Tight Cluster</p>	
Bloom	<p>Apple scab Schedule is very similar to Tight Cluster except that Captan may be used alone or in combination with an SI. Do not use Captan within 10 days of an oil application</p> <p>Captan 80WP..... 1.25 lb. per 100 gal. OR Flint 50WG..... 0.8 oz. per 100 gal.</p> <p>OR A COMBINATION OF EITHER Rally 40WP..... 2 oz. per acre</p> <p>PLUS EITHER Dithane/Manzate/Penncozeb 75DF/80WP..... 1 lb. per 100 gal. or Captan 50WP..... 2 lb. per 100 gal. or Captan 80WP..... 10 oz. per 100 gal. or Captan 4L..... 1 pt. per 100 gal.</p> <p>Fire blight NOTE: Streptomycin must be applied for fire blight only according to a weather-based forecasting program such as Maryblyt or Cougarblight.</p>	

	<p>BLOSSOM BLIGHT Streptomycin Agrimycin 17WP.....</p> <p>OR A COMBINATION OF Agrimycin 17WP.....</p> <p>PLUS Regulaid (spreader/activator).....</p> <p>If in 2 – 4 days if another application is needed, repeat streptomycin (Agrimycin)</p> <p>SHOOT BLIGHT (late bloom or early petal fall) Prohexadione calcium Trees > 5 years old Apogee 27.5DF*</p> <p>Trees < 5 years old Apogee 27.5DF</p> <p>*To be effective, Apogee must be applied well before shoot blight will first appear. Therefore Apogee should be used only if blossom infections are severe or if a history of fire blight in the block the previous year suggests a high risk of shoot blight.</p> <p>NOTE: After bloom, applications of streptomycin for fire blight must be made only in the event of hail or high wind damage in orchards with existing infections.</p>	<p>1.5 lbs. per acre</p> <p>1 lb. per acre</p> <p>1 pt. per 100 gal. actual spray (do not concentrate)</p> <p>6 oz per 100 gal.</p> <p>3 oz per 100 gal.</p>
	<p>Codling moth: Assume 1 complete application after bio-fix at:</p> <p>75-100 DD Rimon (Pre-egg laying to early egg laying)</p> <p>220-300 DD Calypso (First egg hatch).....</p> <p>OR Assail if STLM, OFM counts are over TH</p> <p>OR Delegate if OBLR, RBLR, OFM, SJS are over TH</p> <p>340-600 DD Virosoft CM Virus (Late egg hatch to Peak egg hatch ...</p> <p>1200-1250 DD Assail if CM counts are over threshold only</p> <p>Obliquebanded leafroller: If needed, based on >3% infested blossom clusters. Broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, may reduce or eliminate the need to apply an insecticide for OBLR</p>	<p>30 oz. per acre</p> <p>6 oz. per acre</p> <p>2.5 oz. per acre</p> <p>4.5 – 7 oz. per acre</p> <p>2 oz. per acre</p> <p>2.5 oz. per acre</p>

<p>Petal Fall</p>	<p>Apple scab: Same as bloom EXCEPT DO NOT USE EBDCs AFTER BLOOM if you use miticides other than oil. Avoiding EBDCs after bloom will preserve predators.</p> <p>Mites: Make no more than two post-bloom miticide applications per season (except for oil). Oil (e.g., Stylet-Oil, Omni, PureSpray, Damoil)</p> <p>Sevin applied as a thinner may also have some benefit for Plum Curculio control but must not be applied unless for thinning purposes</p> <p>Plum curculio: If needed (See Bloom) Calypso 4F</p> <p>Note: Sevin applied as a thinner may also have some benefit for Plum Curculio control but must not be applied unless for thinning purposes.</p> <p>Obliquebanded leafroller: If needed based on $\geq 3\%$ infested blossom clusters (Only if not treated at bloom.) Delegate WF</p> <p>Sample to determine if broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, reduce or eliminate the need to apply an insecticide for OBLR.</p>	<p>0.5 gal. per 100 gal.</p> <p>4 -8 fl. oz. per acre</p> <p>6-7 oz per acre</p>
<p>First Cover</p>	<p>Apple scab: Same as Petal Fall</p> <p>Plum curculio: Same as Petal Fall, except after the 1st application for plum curculio, base any additional treatment decisions on scouting for fresh injury and/or a degree-day based oviposition model. After the first application for plum curculio, use perimeter row sprays rather than whole block treatments. <i>Note: For trees less than 7 ft. in height, or where scouting indicates fresh injury in the interior of a block, full block applications may be made.</i></p> <p>Codling moth: If needed based on block or region history. Assail 30 SG..... (First treatment applied at 250 degree days (base 50) after the first sustained pheromone trap catch (biofix). If pressure is severe as indicated by pheromone traps or fruit damage, an additional application may be made 10-14 days later.)</p> <p>San Jose scale: If needed based on block history. Esteem 35 WP</p> <p>OR Provado 1.6F..... (First treatment applied at 500 degree days (base 50) from March 1 and a second applied 14 days later. If pressure is severe as indicated by pheromone traps or fruit damage, an additional treatment against second generation crawlers at 1450 degree days from March 1 (in late July to August) with a second application 14 days later.)</p>	<p>4-8 oz per acre</p> <p>4 – 5 fl oz per acre 2 oz per 100 gal</p>

<p>Second Cover</p>	<p>Sooty blotch and flyspeck: Do not treat unless need is indicated by previous history and/or weather monitoring for wetting hours. Do not apply fungicides for summer disease until 270 wetting hours have accumulated since petal fall, or if wetting data are not available, early-July may be used as an estimated date.</p> <p>Flint 50WG..... OR Captan 50WP..... OR Captan 80WP.....</p> <p>OR Captan 4L</p> <p>Plum curculio: See First Cover</p> <p>Codling moth: See First Cover for insecticide options</p> <p>Japanese beetle Applications limited to the top of the canopy where feeding is occurring may be effective. Sample to determine if broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, reduce or eliminate the need to apply an insecticide for Japanese beetle.</p> <p>San Jose scale: See First Cover.</p>	<p>0.67 oz. per 100 gal. 1 lb. per 100 gal. 0.625 lb. (10 oz.) per per 100 gal. 1 pt. per 100 gal.</p>
<p>Third Cover</p>	<p>Sooty blotch and flyspeck: After the first application for summer disease (see Second Cover), do not make additional applications closer than intervals listed in Table A below.</p> <p>Captan 50WP..... OR Captan 80WP.....</p> <p>OR Captan 4L</p> <p>Table A. Activity of fungicides against summer diseases</p> <p>Captan 50WP Rate per 100 gal. Minimum interval (days)..... Maximum rainfall (in.) during interval.....</p> <p>Flint 50 WDG Rate per 100 gal. Minimum interval (days)..... Maximum rainfall (in.) during interval.....</p> <p>Adapted from D.A. Rosenberger, Cornell University</p> <p>Obliquebanded leafroller: Base application timing on trap catches and DD model (360 DD base 43F after first adult catch)</p>	<p>1 lb. per 100 gal. 0.625 lb. (10 oz.) per 100 gal. 1 pt. per 100 gal.</p> <p>1 lb 14 2.0</p> <p>0.67 oz. 21 2.5</p>

	<p>Delegate WG.....</p> <p>Follow-up sprays are recommended 10-14 days later to ensure contacting most larvae of the 1st summer generation.</p> <p>Sample to determine if broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, reduce or eliminate the need to apply an insecticide for OBLR.</p>	6-7 oz per acre
After Third Cover	<p>Sooty blotch and flyspeck: Same as Third Cover except that a third summer disease application may be made only as per Table A above.</p> <p>Apple Maggot: Base applications on monitoring traps (threshold of ≥ 1 for non baited spheres)</p> <p>Assail 30SG.....</p> <p>OR Delegate WG.....</p> <p>Sample to determine if broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, reduce or eliminate the need to apply an insecticide for OBLR.</p> <p>Codling moth and Oriental fruit moth: Base applications on trap catch (1st adult flight biofix) and DD developmental models (CM: 250 DD base 50F from biofix; OFM: 170 DD base 45F from biofix), plus follow-up application 10-14 days later for each brood.</p> <p>Assail 30SG.....</p> <p>OR Granulovirus Virosoft CP4 (for codling moth only).....</p> <p>White apple leafhopper: Base applications on monitoring</p> <p>Assail 30SG.....</p> <p>Sample to determine if broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, reduce or eliminate the need to apply an insecticide for WAL.</p> <p>Woolly apple aphid:</p> <p>Assail 30SG.....</p> <p>Sample to determine if broad spectrum insecticides (Assail, Calypso) applied for other pests, e.g., apple maggot, codling moth, reduce or eliminate the need to apply an insecticide for WAA.</p>	<p>8 oz per acre</p> <p>6 – 7 oz. per acre</p> <p>8 oz per acre</p> <p>2 oz per acre</p> <p>2.5 – 4 oz per acre</p> <p>4 – 8 oz per acre</p>
After Third Cover		