

## SIMPLIFIED MAINTENANCE SCHEDULE FOR FRUIT TREE CARE

### Maintenance Schedule: Winter

- Dormant and Delayed Dormant Sprays
- Copper - Anthracnose, Peach Leaf Curl
- Wettable sulfur- Scab
- Dormant oil - aphid & mite eggs, scale
- Prune
- Dead, diseased, and damaged wood
- Excessive growth

### Maintenance Schedule: Spring (during bloom)

- **(Just before blooms open) Powdery mildew**
- Apples, pears- before blooms open, set mating-disruptor pheromone traps for codling moth adults
- Copper - Anthracnose, Peach Leaf Curl
- Mason Bee release
- Wettable sulfur - Scab
- Dormant oil - aphid & mite eggs, scale
- Monitor for tent caterpillars, leaf rollers. Manually remove, or use BT biological pesticide
- Codling Moth--Start preventive spraying of fruit 17-21 days after full bloom or 10 days after petal fall. SPRAY TIMING IS CRITICAL – First generation lasts 6 weeks, second generation lives another 6 weeks. Protect during this entire period.
- Monitor for proper growth: ~18 inches/year. You probably don't need to fertilize if your tree is growing at this rate
- Fertilize around the time trees finish blooming. Test soil to determine fertilizer requirements—
  - Spread fertilizer evenly 1–2' away from the trunk
  - Avoid excess N, which encourages vegetative growth, bitter pit and lessens disease resistance
    - See EC 1503 Fertilizing Your Garden: Vegetables, Fruits, and Ornamentals  
<https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1503.pdf>

### Maintenance Schedule: Late Spring (post-bloom)

- Bag apples and pears when they are dime sized to prevent apple maggot infestation (nylon mesh footie bags work well)
- Codling Moth
- Apply Surround (kaolin clay) all summer from late May until harvest.
- For heavier infestations, spinosad should be applied within ten days after petal fall (after all the petals have fallen. An additional two applications will be needed in June, spaced at least 10 to 14 days apart. Two additional applications will be needed; one in July and one in August. Do not exceed six applications per year. ALWAYS APPLY SPINOSAD at dusk to minimize risk to pollinators
- Copper - Anthracnose, Peach Leaf Curl
- Wettable sulfur - Scab,
- Powdery Mildew
- Thin fruit when fruit is about 1 inch. Spacing 6-8 inches for pears, apples, peaches; plums 3-4 inches apart.

### Maintenance Schedule: Summer

- Prune
  - For air flow and light penetration
  - Vegetative growth to control vigor and maintain tree height (around June 20<sup>th</sup>)
- Avoid over-irrigating—Check soil level at 6 inches—water if necessary. Reduce irrigation if growing too vigorously
- Harvest and store

- Good sanitation - destroy infected fruit—scout for codling moth and apple maggot infestation. Seal infected fruit in black plastic bags and place in bright sunlight for 2 weeks to kill worms.
- Apple Maggot—
  - Place sticky traps to monitor for adult apple maggot flies. Hang traps in the outer third of the canopy by mid-June—one apple maggot trap in each small apple tree (less than 8 feet tall), two to four traps on medium-sized trees, or six to eight traps on trees 20 to 25 feet tall. Clean traps weekly and replace adhesive every 3 weeks. If necessary, apply approved chemical control.
  - Start applications of Surround (kaolin clay) (organic) in late June and continue through the summer months to keep the fruit covered with the clay residue. Applications of clay will be required after heavy rains and once every two weeks as rapidly expanding apples can create breaks in the clay residue.

#### **Maintenance Schedule: Summer to Harvest**

- Codling moth
  - Bag fruits with nylon footie socks or lunch bags
  - Horticultural oil: ~3-4 weeks after bloom, apply every 5-7 days for 4-5 weeks
    - Use pheromone traps to identify when adults emerge
  - Spinosad, kaolin clay (Surround), carbaryl, or combination “Fruit Tree Spray” (captan + carbaryl + malathion)
    - Carbaryl (Sevin) kills predatory mites which may result in an outbreak of spider mites

#### **Maintenance Schedule: Fall**

- Good sanitation
- Remove infected/un-harvested fruit
- Rake and remove leaves
- If composting, don’t return compost to orchard
- Spray when ~½ leaves have fallen to control diseases, mites, aphids, and scale
- Horticultural oil, Copper



# Fruit Care Calendar (Adapted from <https://nwfruit.org/fruit-tree-care-calendar/>)

<b>Jan</b>	<a href="#">apply control</a> for <a href="#">peach leaf curl</a> apply three (3) times 3 weeks apart starting in early January until <a href="#">bud break</a>	plant <a href="#">bare root</a> trees, vines, <a href="#">graft scionwood</a>	<a href="#">apply fertilizer &amp; lime</a>	<a href="#">Collect scion wood while fully dormant</a>	<a href="#">Anthracnose Control</a>
<b>Feb</b>	<a href="#">protect peach, apricot, nectarine blossoms from frost</a>	Prune Grape Vines UC Pruning Videos <a href="#">Cane Spur</a>		dormant season <a href="#">pruning &amp; Video</a>	<a href="#">Mason Bee Release</a>
<b>March</b>	<a href="#">Prune/fertilize</a> blueberries	<a href="#">Fertilize raspberries/blackberries</a>	<a href="#">delayed dormant control</a> (Buds begin to swell but before green tips start to show.)		<a href="#">Stone Fruit Control brown rot &amp; shothole</a>
<b>April</b>	repair trellis support systems <a href="#">Fruit trees</a> <a href="#">Grapes</a>	check <a href="#">for tent caterpillars, leaf rollers</a> , use BT			
<b>May</b>	<a href="#">Codling Moth Control</a> <a href="#">Organic pest management</a>	If necessary, <a href="#">fertilize when trees finish blooming</a>  <a href="#">Check/install</a> irrigation.  Check soil moisture at 6 inches deep. irrigate if needed	<a href="#">aphids, scale, mites</a>  <a href="#">scab and mildew control (apple, pear)</a>	<a href="#">apply sticky trap ant barrier</a> (see "Ant Management")	<a href="#">Fruit Thinning (video) apple-pear peaches-</a>
	net cherries, <a href="#">strawberries</a> , and <a href="#">blueberries</a>	Reduce irrigation if tree is growing vigorously (>16-18 inches new growth)			<a href="#">Fertilize blueberries &amp; raspberries</a>
<b>June</b>	Late June: Set out <a href="#">apple maggot</a> traps	Remove fruit infected with disease or insects immediately.		train young trees stake, use <a href="#">spreaders</a>	<a href="#">Fruit Thinning apple-pear</a>
	<a href="#">Codling Moth Control</a> <a href="#">Organic pest management</a>			cut suckers	<a href="#">Fertilize blueberries &amp; raspberries</a>
<b>July</b>			monitor <a href="#">apple maggot control</a>		
<b>August</b>	<a href="#">Cut back June-bearing strawberries after harvest, fertilize</a>			remove <a href="#">laterals on stone fruit</a>	Grape Spray <a href="#">mildew botrytis</a>
<b>Sept.</b>	<a href="#">finish bark grafting trees</a>		<a href="#">summer pruning</a>	support fruited branches	extract <a href="#">mason bee</a> cocoons
<b>Oct.</b>	<a href="#">Apply fungicide for peach leaf curl at 50% leaf fall</a>		prepare ground for <a href="#">spring planting</a>	avoid late pruning	Sanitation-cleanup diseased/dropped fruit & leaves Monitor <a href="#">anthracnose</a> and begin control after harvest
<b>Nov.</b>					
<b>Dec.</b>	<a href="#">begin transplanting nursery trees</a>	<a href="#">collect scionwood</a>		<a href="#">begin dormant pruning</a>	





**SUGGESTED SPRAY SCHEDULE FOR HOME GARDEN CHERRIES Revised 2019**




Growth Stage	Description	Target Information	Chemical Sprays	Important
<b>Dormant</b> 	Before buds show any activity in late winter	For Coryneum blight (Shothole), bacterial gummosis ➤ <b>When daytime temperatures reach 40 – 45 F.</b> Finish spraying by noon to insure good dry time.	➤ Copper based spray (Ex. Monterey Liqui-Cop Copper Fungicidal Garden Spray); Chlorothalonil (Ex. Ortho Max Garden Disease Control Conc).	General purpose fungicide. When used as dormant spray, it can burn young leaf tissues.
<b>Delayed-Dormant</b> 	In late winter, just as buds begin to show first green tissue.	Overwintering scales, aphids and mites. ➤ <b>When daytime temperature is between 45 – 55 F, with no frost forecast overnight.</b> Finish spraying by noon to insure good dry time.	➤ Superior type petroleum horticultural oils (Ex. Ortho Volck Oil Spray) May mix with lime-sulfur. Products available under a variety of labels. Follow directions on label carefully to avoid plant damage.	<b>This is the most important stage and chemical spray for pest control.</b> Spray to completely wet the tree.
<b>Bloom</b>	When flowers are open.	<b>Avoid pesticide application during bloom to protect honeybees.</b>		
<b>Petal Fall or Shuck</b>	Just as dead flowers fall away from young fruit.	<b>A critical management time for:</b> ➤ Powdery mildew ➤ Shot hole ➤ Aphids ➤ Scale ➤ Mites ➤ Feeding caterpillars	➤ Summer Horticulture Oil (Ex. Monterey Horticultural Oil [Organic]) <b>*Caution</b> ➤ Lime sulfur ➤ Sulfur (Ex. Lilly Miller Sulfur Dust Fungicide/Insecticide Dust or Spray) ➤ Chlorothalonil (Ex. Ortho Max Garden Disease Control Conc) ➤ Insecticidal soaps (Ex. Safer's); Azadirachtin (Ex. Azamax Botanical Insecticide, Miticide, & Nematicide [Organic]); Horticultural Oil (Ex. R-T-U Year-Round Spray Oil.) ➤ Neem Oil (Ex. Safer Brand Garden Defense Multi-Purpose Spray Conc [Organic]); ➤ Insecticidal soaps (May require several applications) ➤ Spinosad (Ex. Monterey Garden Insect Spray); <i>Bacillus thuringiensis</i> (Bt) (Ex. Bonide Thuricide BT Conc)	<b>*Caution</b> – Lime sulfur should not be used if using Oil.  This is a critical time for managing pest problems.  <i>For aphids, wet tree completely.</i>  <i>Make sure spray covers top and bottom of leaves.</i>

(Continued on back)

<b>Late Spring &amp; Summer</b>	<p><b>Cherry fruit fly</b> preventative sprays should be started when cherries turn from light green to yellow green.</p>	<p><b>Critical time to manage:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Cherry fruit fly</b> <i>Cherry Fruit Fly: a fly with black banding on clear wings. Inserts eggs under fruit skin. Eggs hatch, resulting in maggots present in fruit at harvest.</i></li> </ul>	<ul style="list-style-type: none"> <li>➤ Spinosad (Ex. Monterey Garden Insect Spray); Acetamiprid (Ex. Ortho Bug B Gon Systemic Insect Killer Conc.); Malathion (Ex. Bonide Malathion Insect Control Conc);</li> </ul>	<p><b>Cherry fruit fly is a major pest of cherries.</b> It is present mid-May to the last of July.</p> <p><b>A single fruit fly maggot</b> in commercial cherry grower's fruit is very serious.</p>
	<p><b>*New Summer Pest!</b></p>	<ul style="list-style-type: none"> <li>➤ Powdery mildew and hatching insects</li> <li>➤ <b>Spotted Winged Drosophila*</b></li> </ul>	<ul style="list-style-type: none"> <li>➤ Summer Horticulture Oil (Caution if using lime sulfur); Insecticidal soap</li> <li>➤ Spinosad (Ex. Monterey Garden Insect Spray)</li> </ul>	
<b>Fall</b>	<p><b>Left over fruit:</b> Remove remaining fruit from the tree, seal in black garbage bags. Leave in sun for two weeks to kill larvae.</p> <ul style="list-style-type: none"> <li>➤ <b>If any fruit is left on the tree it must be sprayed for 4 weeks after normal harvest time.</b></li> </ul> <p>Prevention of coryneum blight (shothole) and bacterial gummosis.</p> <ul style="list-style-type: none"> <li>➤ Prior to rainy weather, usually October, apply copper spray as suggested in "Dormant" section.</li> </ul>			
<b>Additional Information</b>	<ul style="list-style-type: none"> <li>◆ <b>CAUTION – Read this guide carefully. Read the product label directions carefully. Read and follow all label directions for responsible use of any pesticide.</b></li> <li>◆ <b>Aphids</b> – Seldom build up to damaging levels in home garden fruit trees. Wash them off with stream of water from the hose, you rarely have to spray.</li> <li>◆ <b>Pesticide resistance</b> – Vary products during the season and in following seasons to minimize pest resistance.</li> <li>◆ <b>Too much fruit to handle</b> – <i>Cut down tree and purchase quality fruit for use. Help commercial orchards by maintaining good care and pest management practices for your desired fruit trees!!!</i></li> <li>◆ <b>Further information</b> – Contact WSU Chelan County Extension at (509) 667-6540 or our website at <a href="https://extension.wsu.edu/chelan-douglas/gardening/mg/">https://extension.wsu.edu/chelan-douglas/gardening/mg/</a></li> <li>◆ <b>Trade name disclaimer</b> – Use of trade names are for example purposes only. No endorsement is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control.</li> </ul>			



**SUGGESTED ORGANIC SPRAY SCHEDULE FOR HOME GARDEN APPLES & PEARS**

Growth Stage	Description	Target Information	Chemical Sprays	Important
<b>Dormant</b> 	Before buds show any activity in late winter	<i>PEAR</i> : overwintering scales, aphids and mites. ➤ <b>When daytime temperatures reach 40 – 45 F.</b> Finish spraying by noon to insure good dry time. ➤ Manage pests as they hatch in early spring.	➤ Superior type horticultural dormant oil Products available under a variety of labels. Follow directions on label carefully to avoid plant damage. U.R. rate of 92% or more. ➤ See “Pre-Pink”	Dormant and Delayed Dormant are the most important stages and chemical spray for pest control.
<b>Delayed-Dormant</b> 	In late winter, just as buds begin to show first green tissue.	<i>APPLE &amp; PEAR</i> : overwintering scales, aphids and mites. ➤ <b>When daytime temperature is between 45 – 55 F, with no frost forecast overnight.</b> Finish spraying by noon to insure good dry time.	➤ See “Dormant” ➤ Cultivate beneficial insects <i>Oils are not effective against woolly apple aphids.</i>	These are the most important stages and chemical spray for pest control.
<b>Pre – Pink to Petal Fall</b> 	Just before bud clusters show any color through petal fall.	Critical time to manage pests. ➤ Powdery mildew control. ➤ Hatching insect pests such as mealybug, lygus bug, stinkbug, aphid, mites. ➤ Feeding caterpillars	➤ Summer Horticulture Oil ➤ Lime sulfur (Ex. Bonide Lime Sulfur) ➤ Insecticidal soaps (Safer) ➤ Cultivate beneficial insects ➤ Spinosad (Ex. Monterey Garden Insect Spray) ➤ <i>Bacillus thuringiensis</i> (Ex. Fertilome Dipel Pro)	<b>Do not use Summer Horticulture Oil if using lime sulfur at any time of year.</b> <b>Do not</b> apply lime sulfur spray to <b>Delicious apple</b> or <b>Anjou pear</b> varieties at this time as severe fruit drop can occur later. <i>Make sure spray covers top and bottom of leaves.</i>
<b>Bloom</b>	When flowers are open.	<b>Avoid pesticide application during bloom to protect honeybees!!!!</b>		



<b>Late Spring &amp; Early Summer</b>	<p>Starting 17-21 days after full bloom. <b>Keep protected through August/mid-September.</b></p> <p><i>Reapply after brief, heavy rainfall or showers of longer duration, then resume regular schedule.</i></p>	<p>➤ Codling moth “Stings”- shallow entries made on surface of fruit.</p> <p>Treat “stung” apples as source of codling moth by removing infested apples from the tree, seal in black garbage bags. Leave in sun for two weeks to kill worms.</p>	<p>Start preventative spraying of fruit 17-21 days after full bloom or 10 days after petal fall. <b>SPRAY TIMING IS CRITICAL</b> – First generation lasts 6 weeks, second generation lives another 6 weeks. Protect during this entire period. Follow spray schedule on label.</p> <p>➤ Spinosad (Ex. Monterey Garden Insect Spray)</p> <p>➤ <b>Alternative Method:</b> Exclusion bags – these bags are placed on each fruit just after petal fall to exclude codling moth and apple maggot. This method works best on small trees. (Red Apple Bag #6 for codling moth. Can be found at orchard supply co. such as Wilson Irrigation &amp; Orchard Supplies in Wenatchee)</p>	<p>If the apple is not protected, the eggs laid by the codling moth will hatch and the worm will enter the apple and be protected from the sprays.</p> <p>See “Stings” at left for handling treatment.</p>
		<p>➤ Apple maggot</p>	<p>➤ Spinosad (Ex. Monterey Garden Insect Spray)</p> <p>➤ <b>Alternative Method:</b> Exclusion bags – See above. (Apple maggot exclusion bags can be found on-line).</p>	
<b>Important Additional Information</b>	<ul style="list-style-type: none"> <li>◆ <b>Postharvest - To reduce infestation and spread of pests to commercial orchards - REMOVE ALL FRUIT</b> - on the tree and ground.</li> <li>◆ <b>CAUTION – Read this guide carefully. Read the product label directions carefully. Read and follow all label directions for responsible use of any pesticide.</b></li> <li>◆ <b>Aphids</b> – Seldom build up to damaging levels in home garden fruit trees. Wash them off with stream of water from the hose, you rarely have to spray.</li> <li>◆ <b>Pesticide resistance</b> – Vary products during the season and in following seasons to minimize pest resistance.</li> <li>◆ <b>Too much fruit to handle</b> – <i>Cut down tree and purchase quality fruit for use. Help commercial orchards by maintaining good care and pest management practices for your desired fruit trees!!!</i></li> <li>◆ <b>Further information</b> – Contact WSU Chelan County Extension at (509) 667-6540 or our website at <a href="http://county.wsu.edu/chelan-douglas/GARDENING/MG/Pages/default.aspx">http://county.wsu.edu/chelan-douglas/GARDENING/MG/Pages/default.aspx</a>.</li> <li>◆ <b>Trade name disclaimer</b> – Use of trade names or supply companies are for example purposes only. No discrimination is intended and no endorsement is implied.</li> </ul>			

Compiled by Paula Dinius, Urban Horticulturist, WSU Chelan County Extension. Revised 05/2013.

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**SUGGESTED SPRAY SCHEDULE FOR HOME GARDEN APPLES Revised 2019**


Growth Stage	Description	Target Information	Chemical Sprays	Important
<b>Delayed-Dormant</b> 	In late winter, just as buds begin to show first green tissue.	<ul style="list-style-type: none"> <li>➤ Spray when daytime temperature is between 45 – 55 F, with no frost forecast overnight. Finish spraying by noon to insure good dry time. Spray for over-wintering scales, aphids, and mites. <i>Oils are not effective against woolly apple aphids</i></li> <li>➤ Manage pests as they hatch in early spring.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Superior type petroleum horticultural oils Products available under a variety of labels. Follow directions on label carefully to avoid plant damage. U.R. rate of 92% or more.</li> <li>➤ See “Pink”</li> </ul>	<b>This is the most important stage and chemical spray to control pests.</b>
<b>Pink</b> 	Just as flower clusters open, but before flowers open.	<ul style="list-style-type: none"> <li>➤ Powdery mildew control.</li> <li>➤ Hatching insect pests such as mealybug, lygus bug, stinkbug, aphid, mites.</li> <li>➤ Feeding caterpillars such as leaf rollers, army or cut worms</li> </ul>	<ul style="list-style-type: none"> <li>➤ All season horticulture oil (Ex. R-T-U Year Round Spray Oil) Sulfur (Ex. Lilly Miller Sulfur Dust Fungicide/Insecticide Dust or Spray)</li> <li>➤ Potassium laurate (Ex. Safer Brand Insect Killing Soap Conc); Acetamiprid (Ex. Ortho Flower, Fruit &amp; Vegetable Insect Killer), Esfenvalerate (Ex. Monterey Bug Buster II RTS)</li> <li>➤ Spinosad (Ex. Monterey Garden Insect Spray); <i>Bacillus thuringiensis</i> (Bt) (Ex. Fertilome Dipel Dust)</li> </ul>	<p><b>Do not use horticulture oil if using sulfur at any time of year. It can be toxic.</b></p> <p><b>Do not apply sulfur spray to Delicious varieties at this time as severe fruit drop can occur later.</b></p> <p>★ <i>Make sure spray covers top and bottom of leaves.</i></p>
<b>Bloom</b>	When flowers are open.	<b>Avoid pesticide application during bloom to protect honeybees!!!!</b>		

<b>Petal Fall</b>	Just after petals fall from blossoms.	<ul style="list-style-type: none"> <li>➤ Powdery mildew</li> <li>➤ Critical time for management of insect pests listed in “Pink”</li> </ul>	<ul style="list-style-type: none"> <li>➤ All season horticulture oil</li> <li>➤ See “Pink” section above</li> </ul>	<b>Do Not Use horticultural oil if Sulfur was used in “Pink”.</b>
<b>Late Spring &amp; Early Summer</b>	<p>Starting 17-21 days after full bloom. <b>Keep protected through August/mid-September.</b></p> <p><i>Reapply after brief, heavy rainfall or showers of longer duration, then resume regular schedule</i></p>	<ul style="list-style-type: none"> <li>➤ Codling moth “Stings”- shallow entries made on surface of fruit. Treat “stung” apples as source of codling moth by removing infested apples from the tree, seal in black garbage bags. Leave in sun for two weeks to kill worms.</li> <li>➤ Apple maggot</li> </ul>	<p><b>PRIMARY PEST OF APPLES.</b> Start preventative spraying of fruit 17-21 days after full bloom or 10 days after petal fall. <b>SPRAY TIMING IS CRITICAL</b> – First generation lasts 6 weeks, second generation lives another 6 weeks. Protect during this entire period. Follow spray schedule on label.</p> <ul style="list-style-type: none"> <li>➤ Esfenvalerate (Monterey Bug Buster II); Spinosad (Ex. Monterey Garden Insect Spray); Permethrin (Ex. Bonide Eight Insect Control Garden and Home RTU), Acetamiprid (Ex. Ortho Flower, Fruit &amp; Vegetable Insect Killer).</li> </ul> <p>Apply first in early July</p> <ul style="list-style-type: none"> <li>◆ Pesticides as above for codling moth.</li> <li>◆ Follow spray schedule on label for apple maggot.</li> </ul>	If the apple is not protected, the egg laid by the codling moth will hatch and the worm will enter the apple and be protected from the sprays. Handle infested apples as described at left under “Stings”.
<b>Additional Information</b>	<ul style="list-style-type: none"> <li>◆ <b>CAUTION</b> – Read this guide carefully. Read the product label directions carefully. Read and follow all label directions for responsible use of any pesticide. <b>THE LABEL IS THE LAW.</b></li> <li>◆ <b>Aphids</b> – Seldom build up to damaging levels in home garden fruit trees. Wash them off with stream of water from the hose, you rarely have to spray.</li> <li>◆ <b>Pesticide resistance</b> – Vary products during the season and in following seasons to minimize pest resistance.</li> <li>◆ <b>Too much fruit to handle</b> – <i>Cut down tree and purchase quality fruit for use. Help commercial orchards by maintaining good care and pest management practices for your desired fruit trees!!!</i></li> <li>◆ <b>Further information</b> – Contact WSU Chelan County Extension at (509) 667-6540 or our website at <a href="http://county.wsu.edu/chelan-douglas/GARDENING/MG/Pages/default.aspx">http://county.wsu.edu/chelan-douglas/GARDENING/MG/Pages/default.aspx</a></li> <li>◆ <b>Trade name disclaimer</b> – Use of trade names are for example purposes only. No endorsement is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control.</li> </ul>			




**SUGGESTED SPRAY SCHEDULE FOR HOME GARDEN PEARS 2019**

Growth Stage	Description	Target Information	Chemical Sprays	Important
<b>Dormant</b> 	Before buds show any activity in late winter.	Overwintering pear psylla, scales, aphids and mites. ➤ <b>When daytime temperatures reach 40 – 45 F.</b> Finish spraying by noon to insure good dry time.	<ul style="list-style-type: none"> <li>➤ Superior type horticultural dormant oil.</li> <li>➤ May mix with lime-sulfur.</li> </ul> Products available under a variety of labels.	These are the most important stages and chemical spray for pest control. Spray to completely wet the tree.
<b>Delayed-Dormant</b> 	In late winter, just as buds begin to show first green tissue.	Overwintering pear psylla, scales, aphids and mites. ➤ <b>When daytime temperature is between 45 – 55 F, with no frost forecast overnight.</b> Finish spraying by noon to insure good dry time.	<ul style="list-style-type: none"> <li>➤ See “Dormant”</li> </ul>	These are the most important stages and chemical spray for pest control. Spray to completely wet the tree.
<b>Pre – Pink to Petal Fall</b> 	Just before bud clusters show any color through petal fall.	<b>Critical time to manage pests.</b> <ul style="list-style-type: none"> <li>➤ Powdery mildew control.</li> <li>➤ Aphids</li> <li>➤ Scale</li> <li>➤ Stink, lygus, boxelder bugs</li> </ul>	<ul style="list-style-type: none"> <li>➤ Sulfur* (Ex. Safer Brand Garden Fungicide/Flowers, Fruit &amp; Vegetables Conc.)</li> <li>➤ Insecticidal soaps (Ex. Safer’s Insect soap); Azadirachtin (Ex. Azamax Botanical Insecticide, Miticide, &amp; Nematicide [Organic]); <i>Beauveria bassiana</i> (Ex. Naturalis L)</li> <li>➤ Superior type horticultural dormant oil. (Ex. R-T-U Year-Round Spray Oil)</li> <li>➤ Bifenthrin, Zeta-cypermethrin (Ex. Ortho Bug B Gon Insect Killer for Lawns &amp; Gardens Conc.)</li> </ul>	<p><b>*Do not</b> apply lime sulfur spray to <b>Anjou pear</b> varieties at this time as severe fruit drop can occur later.</p> <p><i>Make sure spray covers top and bottom of leaves.</i></p>
<b>Bloom</b>	When flowers are open.	<b>Avoid pesticide application during bloom to protect honeybees.</b>		


<p><b>Con't. Pre – Pink to Petal Fall</b></p> 		<p>➤ <b>Pear psylla</b></p>	<p><b>Primary pest of pears.</b></p> <p>➤ Azadirachtin (Ex. Safer Brand BioNEEM Multi-Purpose Insecticide &amp; Repellent Conc [Organic]); Pyrethrins (Ex. Bug Buster-O [Organic])</p>	<p>Two to three generations, plus a winter form, per year. Become active at bud swell.</p>
	<p>Starting early July <b>keep protected through August.</b></p> <p><i>Reapply after brief, heavy rainfall or showers of longer duration, then resume regular schedule</i></p>	<p>➤ Codling moth “Stings”- shallow entries made on surface of fruit. Treat “stung” pears as source of codling moth by removing infested fruit from the tree, seal in black garbage bags. Leave in sun for two weeks to kill worms.</p>	<p>The 1<sup>st</sup> generation of codling moth damages apples, but the 2<sup>nd</sup> generation, from July – August is a problem for pears. <b>SPRAY TIMING IS CRITICAL</b> – Each generation lasts 6 weeks. Protect from July - August. A 3<sup>rd</sup> generation is possible. Follow spray schedule on label.</p> <p>➤ Azadirachtin (Ex. Azamax Botanical Insecticide, Miticide, &amp; Nematicide [Organic]); Spinosad (Ex. Monterey Garden Insect Spray); Pyrethrins (Ex. Bug Buster-O [Organic]), Acetamiprid (Ex. Ortho Flower, Fruit &amp; Vegetable Insect Killer).</p> <p>The codling moth overwinters in cocoon stage under loose bark or in the soil under the tree.</p>	<p>If the pear is not protected, the egg laid by the codling moth will hatch and the worm will enter the fruit and be protected from the sprays. See “Stings” at left for handling treatment.</p>
<p><b>Additional Information</b></p>	<ul style="list-style-type: none"> <li>◆ <b>CAUTION – Read this guide carefully. Read the product label directions carefully. Read and follow all label directions for responsible use of any pesticide.</b></li> <li>◆ <b>Aphids</b> – Seldom build up to damaging levels in home garden fruit trees. Wash them off with stream of water from the hose, you rarely have to spray.</li> <li>◆ <b>Pesticide resistance</b> – Vary products during the season and in following seasons to minimize pest resistance.</li> <li>◆ <b>Too much fruit to handle</b> – <i>Cut down tree and purchase quality fruit for use. Help commercial orchards by maintaining good care and pest management practices for your desired fruit trees!!!</i></li> <li>◆ <b>Further information</b> – Contact WSU Chelan County Extension at (509) 667-6540 or our website at <a href="https://extension.wsu.edu/chelan-douglas/gardening/mg/">https://extension.wsu.edu/chelan-douglas/gardening/mg/</a></li> <li>◆ <b>Trade name disclaimer</b> – Use of trade names are for example purposes only. No endorsement is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control.</li> </ul>			



**SUGGESTED SPRAY SCHEDULE FOR HOME GARDEN PLUMS AND PRUNES 2019**

Growth Stage	Description	Target Information	Chemical Sprays	Important
<b>Dormant/ Delayed Dormant</b>	Before buds swell, in late winter just as buds begin to show first green.	Coryneum blight (shot hole), bacterial canker, leaf curl. ➤ <b>When daytime temperatures reach 40-45 F.</b>	➤ Bordeaux mixture; Copper (Ex. Soap-Shield Flowable Liquid Copper Fungicide [Organic]); Sulfur (Ex. Hi-Yield Snake Eyes Dusting Wettable Sulfur); Chlorothalonil (Ex. Bonide Fung-onil Multi-purpose Fungicide Conc.).	An important stage for pest control.
		Overwintering scales, aphids, mites, peach twig borer ➤ <b>When daytime temperature is between 45 – 55 F, with no frost forecast overnight.</b>	➤ Superior type petroleum horticultural oils. Dormant horticultural oils (Ex. Bonide, Ortho, All Seasons, Hi-Yield)	Finish spraying by noon to insure good dry time.
<b>Pre bloom</b> 	Buds show color, but before flower opens.	Hatching insect pests: ➤ Aphid	➤ Insecticidal soap (Ex. Safer Brand Insect Killing Soap Conc II); Azadirachtin (Ex. Azamax Botanical Insecticide, Miticide, & Nematicide [Organic])	Plant bugs and stink bugs feed on swelling fruit and leaf buds causing buds to dry up.  Repeat spray applications may be necessary in warm weather.  See spray timing on label.
		➤ Stink bug/lygus bug	➤ Azadirachtin (Ex. Safer Brand BioNEEM Multi-Purpose Insecticide & Repellent Conc [Organic])	
		➤ Scale	➤ Superior type petroleum horticultural oils (Ex. R-T-U Year-Round Spray Oil)	
		➤ Peach twig borer	➤ Spinosad (Ex. Bonide Capt. Jack's Deadbug Brew); Pyrethrins (Ex. Bug Buster-O [Organic])	
		➤ Shot hole (Coryneum blight) ➤ Brown rot ➤ Powdery mildew	➤ Myclobutanil (Ex. Spectricide Immunox); 6 Chlorothalonil (Ex. Bonide Fung-onil Multi-purpose Fungicide Conc.); Sulfur (Ex. Hi-Yield Snake Eyes Dusting Wettable Sulfur)	
		➤ Caterpillars	➤ Spinosad (Ex. Bull's-Eye Bioinsecticide)	
<b>Bloom</b>	Flowers are open	<b>Don't apply insecticides around blooming flowers. Apply at night, if necessary.</b>		

(Continued on back)


<p><b>Petal Fall or Shuck</b></p> 	<p>Just as dead flowers fall away from young fruit.</p>	<p>Fungal problems:</p> <ul style="list-style-type: none"> <li>➤ Brown rot, powdery mildew, Coryneum blight</li> </ul> <hr style="border-top: 1px dashed black;"/> <p>Insect pest problems:</p> <ul style="list-style-type: none"> <li>➤ Aphid, plant bugs, stink bugs</li> </ul> <hr style="border-top: 1px dashed black;"/> <p>Feeding caterpillars:</p> <p>peach twig borer, leaf roller, etc.</p>	<ul style="list-style-type: none"> <li>➤ See ‘Pre bloom’ above</li> </ul> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> <li>➤ See ‘Pre bloom’ above</li> </ul> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> <li>➤ See ‘Pre bloom’ above</li> </ul>	<p>An important time for managing pest problems.</p> <p><i>Make sure spray covers top and bottom of leaves.</i></p>
<p><b>Summer</b></p>	<p>Warm weather</p>	<p><b>Peach Tree Borer – major pest</b></p> <ul style="list-style-type: none"> <li>➤ <b>Alternative control for Peach tree borer:</b> Wrap trunk with spun polyester garden blanket, burying the bottom edge at least 4 inches into soil.</li> </ul> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> <li>➤ *Spotted winged Drosophila</li> </ul>	<ul style="list-style-type: none"> <li>➤ Pyrethrins (Ex. Bug Buster-O [Organic])</li> </ul> <hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> <li>➤ Spinosad (Ex. Monterey Garden Insect Spray); Esfenvalerate (Ex. Monterey Bug Buster II)</li> </ul>	<p><b><i>Toxic to bees – do not apply around blooming plants.</i></b></p> <p><b>* New summer pest!</b></p>
<p><b>Fall</b></p>	<p><b>Prevention of Coryneum blight (shothole), bacterial canker and leaf curl.</b></p> <ul style="list-style-type: none"> <li>◆ Prior to rainy weather, usually October, apply copper or sulfur based fungicide or chlorothalonil as suggested in “Dormant” section.</li> </ul>			
<p><b>Additional Information</b></p>	<ul style="list-style-type: none"> <li>◆ <b>CAUTION – Read this guide carefully. Read the product label directions carefully. Read and follow all label directions for responsible use of any pesticide.</b></li> <li>◆ <b>Aphids</b> – Seldom build up to damaging levels in home garden fruit trees. Wash them off with a stream of water from the hose, you rarely have to spray.</li> <li>◆ <b>Pesticide resistance</b> – Vary products during the season and in following seasons to minimize pest resistance.</li> <li>◆ <b>Too much fruit to handle</b> – <i>Cut down tree and purchase quality fruit for use. Help commercial orchards by maintaining good care and pest management practices for your desired fruit trees!!!</i></li> <li>◆ <b>Further information</b> – Contact WSU Chelan County Extension at (509) 667-6540 or our website at <a href="https://extension.wsu.edu/chelan-douglas/gardening/mg/">https://extension.wsu.edu/chelan-douglas/gardening/mg/</a></li> <li>◆ <b>Trade name disclaimer</b> – Use of trade names are for example purposes only. No endorsement is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control.</li> </ul>			


Compiled by Paula Dinius, Urban Horticulturist, WSU Chelan County Extension. Revised 02/2019.

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**SUGGESTED SPRAY SCHEDULE FOR HOME GARDEN PEACHES, NECTARTINES & APRICOTS 2019**

Growth Stage	Description	Target Information	Chemical Sprays	Important
<b>Dormant / Delayed Dormant</b>	Before buds swell in spring	For shot hole, bacterial blight, peach leaf curl and powdery mildew. ➤ <b>When daytime temperatures reach 40 – 45 F.</b>	➤ Lime sulfur; Bordeaux mixture; Copper-based fungicide (Ex. Monterey Liqui-Cop.); Chlorothalonil (Ex. Ortho Max Garden Disease Control)	An important stage for pest control.  Finish spraying by noon to insure good dry time.  <b>Never use sulfur products on apricots</b>
		Overwintering scales, aphids and mites. ➤ <b>When daytime temperature is between 45 – 55 F, with no frost forecast overnight.</b>	➤ Superior type petroleum horticultural oils. (Ex. Bonide, Ortho, All Seasons, Hi-Yield, etc.)	
<b>Pre bloom</b> 	Buds show color, but before flower opens.	Aphids, scale, stinkbugs, lygus bugs and coryneum blight.  Repeat spray applications may be necessary in warm weather. ➤ <b>Follow label directions</b>	➤ Insecticidal soap (mix with chlorothalonil for coryneum blight control); Azadirachtin (Ex. Azamax Botanical Insecticide, Miticide, & Nematicide [Organic]); <i>Beauveria bassiana</i> (Ex. Naturalis L)	Plant bugs and stink bugs feed on swelling fruit and leaf buds causing buds to dry up.  <i>Insecticidal soap not recommended for yellow-skin varieties of nectarines.</i>
		Peach twig borer	➤ Spinosad (Ex. Monterey Garden Insect Spray) ➤ Pyrethrins (Ex. Bug Buster-O [Organic])	
		Caterpillars	➤ Spinosad (Ex. Bonide Captain Jack's Deadbug Brew)	
<b>Bloom</b>	Flowers are open	<b>Avoid insecticide application during bloom to protect honeybees!!!!</b>		

<p><b>Petal Fall or Shuck</b></p> 	<p>Just as dead flowers fall away from young fruit.</p>	<p><b>A critical management time for:</b></p> <p>Aphids, plant bugs, stink bugs</p> <hr style="border-top: 1px dashed black;"/> <p>Feeding caterpillars</p>	<p>➤ Insecticidal soaps; Azadirachtin (Ex. Azamax Botanical Insecticide, Miticide, &amp; Nematicide [Organic]); <i>Beauveria bassiana</i> (Ex. Naturalis L)</p> <hr style="border-top: 1px dashed black;"/> <p>➤ <i>Bacillus thuringiensis Bt</i> (Dipel pro), Spinosad (Ex. Natural Guard Spinosad Landscape &amp; Garden Insecticide RTS)</p>	<p>An important time for managing pest problems. <i>Make sure spray covers top and bottom of leaves.</i></p>
<p><b>Summer</b></p>	<p>Warm weather</p>	<p>➤ Spotted Winged Drosophila*</p> <p>➤ Peach Tree Borer Adults start emerging in June &amp; continue through September. Eggs are laid quickly after mating. Management targets larvae hatch before boring into bark.</p> <p>➤ Other pests</p>	<p>➤ Spinosad (Ex. Monterey Garden Insect Spray)</p> <p>➤ Esfenvalerate (Ex. Monterey Garden Insect Spray)</p> <p>➤ See “Pre-bloom” and “Bloom” for control of other listed pests.</p>	<p>*New Pest! Spotted Winged Drosophila</p>
<p><b>Fall</b></p>	<p><b>Prevention of Coryneum blight (shothole), bacterial canker, and peach leaf curl.</b></p> <p>➤ Prior to rainy weather, usually October, apply copper based fungicide or chlorothalonil as suggested in “Dormant” section.</p>			
<p><b>Additional Information</b></p>	<p>◆ <b>CAUTION – Read this guide carefully. Read the product label directions carefully. Read and follow all label directions for responsible use of any pesticide.</b></p> <p>◆ <b>Aphids</b> – Seldom build up to damaging levels in home garden fruit trees. Wash them off with a stream of water from the hose, you rarely have to spray.</p> <p>◆ <b>Pesticide resistance</b> – Vary products during the season and in following seasons to minimize pest resistance.</p> <p>◆ <b>Too much fruit to handle</b> – <i>Cut down tree and purchase quality fruit for use. Help commercial orchards by maintaining good care and pest management practices for your desired fruit trees!!!</i></p> <p>◆ <b>Further information</b> – Contact WSU Chelan County Extension at (509) 667-6540 or our website at <a href="https://extension.wsu.edu/chelan-douglas/gardening/mg/">https://extension.wsu.edu/chelan-douglas/gardening/mg/</a></p> <p>◆ <b>Trade name disclaimer</b> – Use of trade names are for example purposes only. No endorsement is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control.</p>			