Oregon State University | Extension Service

Prune and Plum

2013 Pest Management Guide for the Willamette Valley

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The chemicals, formulations, and rates listed for insect, mite, and disease control are among the best recommendations based on label directions, research, and orchard use experience. Only a thorough knowledge of the orchard, its variety, tree size and density, canopy characteristics, pest complex, and past pest problems will enable you to correctly select chemicals, rates, amount of water used per acre, and method of application for optimum pest control. Occasionally, different formulations of a product or like formulations containing a different amount of active ingredient also are registered and effective for use on the pests listed. These products also may be used; we do not intend to discriminate against them. You may wish to consult their labels and determine whether their use confers advantages over the products listed in this guide.

Always refer to the pesticide label for use instructions. It is the legal document regarding use patterns. Two questions frequently are asked about the chemical control of insects and diseases: "How much chemical do I use per acre?" and "What is the least amount of water I need per acre to apply in my concentrate sprayer?" Notice that the schedule below suggests an amount of formulated product (not active ingredient) to use per acre. This amount is based on a "typical" middle age and density orchard with moderate pest pressure. Common sense indicates that less material may be needed (than that given) for 1- to 4-year-old orchards. Conversely, more chemical (within label limits) may be required for large, mature trees experiencing heavy pest pressure from multiple pests.

Many insecticide labels today indicate the minimum amount of water needed per acre to apply concentrate sprays of insecticides, as well as how to calculate the amount of chemical needed per acre in a concentrate sprayer. **CHECK LABEL BEFORE SPRAYING!** Some label directions indicate dilute applications only.

Also:

1. Make sure any tank-mixes of pesticides are compatible. For example, the elevated pH of some boron spray solutions weakens many insecticides.
2. Use adjuvants and spreader stickers with caution.
3. Heavy, brief rain or extended rainfall (0.75 inch for more than 24 hours) can remove pesticides from fruit and foliage. Reapplication may be necessary (within label limits).

Important information

1. Be aware of worker protection standards (WPS). All new pesticide labels will provide orchard reentry intervals and personal protection equipment information.
2. Diazinon is now classified as a restricted use pesticide due to bird toxicity. Maximum per-acre application rates have been reduced to 4 lb 50W, and the preharvest interval extended to 21 days.
3. *Orchard Pest Management, a Resource Book for the Pacific Northwest*, 1993 (edited by Beers, Brunner, Willet, and Warner, published by the Good Fruit Grower, Yakima, WA) provides a comprehensive list of the tree fruit insect and mite pests of orchards. Life histories, damage, detection, monitoring, and management of the pests are covered. It is one of our primary sources of information in developing this pest management guide and the most complete reference on orchard use of the principles of integrated pest management.

Use only one material except where a combination is indicated. Follow label precautions when tank-mixing oils, fungicides, and insecticides. Materials are not listed in order of preference.

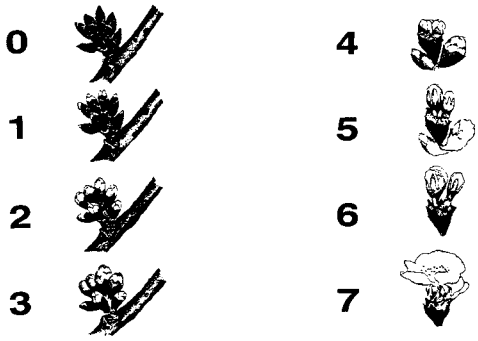
Stages

Dormant Season (Stage 0)
Dormant and Delayed Dormant (Stages 0–1)
Popcorn (Stages 2–5)
Full Blossom (Stage 7)

Not shown

Petal Fall; Shuck Fall and 10–14 days later;
Late Spring and Summer; Postharvest

Illustration courtesy of Washington State University Extension.



Prune and Plum Pest Control Recommendations

Use only one material except where a combination is indicated. Follow label precautions when tank-mixing oils, fungicides, and insecticides. Materials are not listed in order of preference.

Dormant and Delayed Dormant (Stages 0–1—before buds open and before eggs hatch)		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Lecanium and San Jose scale, aphid eggs, European red mite eggs, peach twig borer		
Horticultural mineral oil (HMO) + an organophosphate insecticide registered for these pests such as:	4 gal	When using a WP formulation with oil, fill sprayer tank one-third full with water, turn on agitator, slowly add the WP, fill tank one-half full with more water, add oil. Keep agitator running, finish filling. Thorough coverage is essential. Dilute sprays recommended.
diazinon 50W	3–4 lb	Limited to 1 application per season.
Lorsban 4E	3–4 pt	—
Popcorn (Stages 2–5—blossom buds white just before opening)		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Leafrollers, bud moth		
diazinon 50WP	4 lb	Limited to 1 application per season. **21-day PHI**.
Success 2L	4–8 oz	**7-day PHI**.
Warrior II	0.02–0.04 lb ai/A	**14-day PHI**.
Shothole borer *Note:* This pest has 2 or 3 generations per year in the Willamette Valley.		
Nothing is registered in plums for shothole borer control.		
Aphids (mealy plum, leaf curl plum)		
diazinon 50WP	4 lb	Limited to 1 application per season. **21-day PHI**.
Plum rust mite		
Acramite 50WS	0.75–1 lb	**3-day PHI**.

Popcorn continues on next page

CONTINUED—Popcorn (Stages 2–5—blossom buds white just before opening)		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Lecanium scale		
diazinon 50WP	4 lb	Limited to 1 application per season. **21-day PHI**.
Peach twig borer		
diazinon 50WP	4 lb	Limited to 1 application per season. **21-day PHI**.
Sevin 4F	3–4 qt	**3-day PHI**.
Lygus bug, stink bug		
Movento	6–9 oz	**7-day PHI**.
Voliam Flexi	0.15–0.175 lb ai/A	**14-day PHI**.
Brown rot blossom blight (see footnote 2, page 8)		
Abound	12–15.5 fl oz	See footnote 5, page 8. Do not use with silicone-based surfactants. 4-hour reentry. **0-day PHI**.
Adament 50WG	4–8 oz	Group 3 + 11 fungicide. 12-hour reentry. **1-day PHI**.
Bravo Weather Stik	3–4.1 pt	Do not apply later than shuck split. 12-hour reentry.
Captan 80WDG	2.5–3.75 lb	24-hour reentry.
Elevate 50WDG	1–1.5 lb	Good control of brown rot when used on peaches or cherries. 12-hour reentry. **0-day PHI**.
Fontelis	14–20 fl oz	12-hour reentry. **0-day PHI**.
Indar 2F	6 fl oz	12-hour reentry. **0-day PHI**.
Inspire Super	16–20 fl oz	Group 3 + 9 fungicide. 12-hour reentry. **2-day PHI**.
Merivon	4–6.7 fl oz	Group 7 + 11 fungicide. Do not use with EC or oil-based products. Only nonionic surfactants can be used within 14 days of harvest. 12-hour reentry. **0-day PHI**.
Pristine	10.5–14.5 oz	Group 7 + 11 fungicide. Do not make more than 4 applications per season. See footnote 5, page 8. 12-hour reentry. **0-day PHI**.
Quadris Top	12–14 fl oz	Group 3 + 11 fungicide. 12-hour reentry. **0-day PHI**.
Quash	2.5–3.5 oz	12-hour reentry. **14-day PHI**.
Quilt Xcel	14 fl oz	Group 3 + 11 fungicide. 12-hour reentry. **0-day PHI**.
Rovral 4F	1–2 pt	Do not make more than 2 applications per season. See footnote 2, page 8. 24-hour reentry.
Scala SC	9–18 fl oz	Do not apply more than 3 applications alone. **2-day PHI**.
Tilt	4 oz	12-hour reentry. **0-day PHI**.
TopGuard	14 fl oz	Do not use with adjuvants. 12-hour reentry. **7-day PHI**.
Topsin 4.5FL	20–30 oz	Tank-mix with another fungicide. 2-day reentry. **1-day PHI**.
Vangard 75WG	5 oz	Do not use more than 30 oz/A per season. Good control of brown rot when used on peaches or cherries. 12-hour reentry.

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Full Blossom (Stage 7)		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Brown rot blossom blight		
See materials listed for Popcorn Stage.		
Russet scab		
Bravo Weather Stik	3–4.1 pt	Do not use after shuck split. 12-hour reentry.
Captan 80WDG	2.5–3.75 lb	24-hour reentry.
Echo 720	3–4.1 pt	Do not use after shuck split. 12-hour reentry.

Petal Fall		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Brown rot blossom blight		
See materials listed for Popcorn Stage.		
Leaf spot		
Abound	12–15 fl oz	See footnote 5, page 8. Do not use with silicone-based surfactants. 4-hour reentry. **0-day PHI**.
Adament 50WG	4–8 oz	Group 3 + 11 fungicide. 12-hour reentry. **1-day PHI**.
Bravo Weather Stik	3–4.1 pt	Do not use after shuck split. 12-hour reentry.
Bumper 41.8EC	4 oz	12-hour reentry.
Captan 80WDG	2.5–3.75 lb	24-hour reentry.
Echo 720	3–4.1 pt	Do not use after shuck split. 12-hour reentry.
Gem 500SC	1.9–3.8 oz	12-hour reentry. **1-day PHI**.
Inspire Super	16–20 fl oz	Group 3 + 9 fungicide. 12-hour reentry. **2-day PHI**.
Merivon	4–6.7 fl oz	Group 7 + 11 fungicide. Do not use with EC or oil-based products. Only nonionic surfactants can be used within 14 days of harvest. 12-hour reentry. **0-day PHI**.
Pristine	10.5–14.5 oz	Group 7 + 11 fungicide. Do not make more than 4 applications per season. See footnote 5, page 8. 12-hour reentry. **0-day PHI**.
Quilt Xcel	14 fl oz	12-hour reentry. **0-day PHI**.
Tilt	4 oz	12-hour reentry. **0-day PHI**.
TopGuard	14 fl oz	Do not use with adjuvants. 12-hour reentry. **7-day PHI**.
Topsin 4.5FL	20–30 oz	Tank-mix with another fungicide. 2-day reentry. **1-day PHI**.
Aphids (mealy plum and leaf curl plum)		
diazinon 50WP	4 lb	Limited to 1 application per season. **21-day PHI**.
Leafrollers, peach twig borer		
See materials listed for Popcorn Stage.		
Plum rust mite		
Acramite 50WS	0.75–1 lb	**3-day PHI**.
Nexter	10.67 oz	**7-day PHI**.
Vendex 50WP	1–2 lb	Do not use more than twice per year. **14-day PHI**.
wettable sulfur 80%	12–14 lb	**0-day PHI**.

Petal Fall continues on next page

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CONTINUED—Petal Fall		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Spider mites		
Acramite 50WS	0.75–1 lb	**3-day PHI**.
Savey 50DF	3–6 oz	Do not use more than once per year. **28-day PHI**.
Vendex 50W	1–2 lb	Do not use more than twice per year. **14-day PHI**.
Lygus bug, stink bug		
Asana XL	5–12 oz	**14-day PHI**.
Shuck Fall and 10–14 days later		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Brown rot fruit rot See materials listed for Popcorn Stage.		
Leaf spot		
Abound	12–15 fl oz	See footnote 5, page 8. Do not use with silicone-based surfactants. 4-hour reentry. **0-day PHI**.
Adament 50WG	4–8 oz	Group 3 + 11 fungicide. 12-hour reentry. **1-day PHI**.
Captan 80WDG	2.5–3.75 lb	24-hour reentry. **0-day PHI**.
Gem 500SC	1.9–3.8 oz	12-hour reentry. **1-day PHI**.
Inspire Super	16–20 fl oz	Group 3 + 9 fungicide. 12-hour reentry. **2-day PHI**.
Merivon	4–6.7 fl oz	Group 7 + 11 fungicide. Do not use with EC or oil-based products. Only nonionic surfactants can be used within 14 days of harvest. 12-hour reentry. **0-day PHI**.
Microthiol Disperss	10–20 lb	24-hour reentry.
Pristine	10.5–14.5 oz	Group 7 + 11 fungicide. Do not make more than 4 applications per season. See footnote 5, page 8. 12-hour reentry. **0-day PHI**.
Quilt Xcel	14 fl oz	12-hour reentry. **0-day PHI**.
Tilt	4 oz	12-hour reentry. **0-day PHI**.
TopGuard	14 fl oz	Do not use with adjuvants. 12-hour reentry. **7-day PHI**.
Topsin 4.5FL	20–30 oz	Tank-mix with another fungicide. 2-day reentry. **1-day PHI**.

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Late Spring and Summer		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Brown rot fruit rot (preharvest)		
Abound	12–15 fl oz	See footnote 5, page 8. Do not use with silicone-based surfactants. 4-hour reentry. **0-day PHI**.
Adament 50WG	4–8 oz	Group 3 + 11 fungicide. 12-hour reentry. **1-day PHI**.
Captan 80WDG	2.5–3.75 lb	24-hour reentry. **0-day PHI**.
Elevate 50WDG	1–1.5 lb	12-hour reentry. **0-day PHI**.
Indar 2F	6 fl oz	12-hour reentry. **0-day PHI**.
Inspire Super	16–20 fl oz	Group 3 + 9 fungicide. 12-hour reentry. **2-day PHI**.
Merivon	4–6.7 fl oz	Group 7 + 11 fungicide. Do not use with EC or oil-based products. Only nonionic surfactants can be used within 14 days of harvest. 12-hour reentry. **0-day PHI**.
Pristine	10.5–14.5 oz	Group 7 + 11 fungicide. Do not make more than 4 applications per season. See footnote 5, page 8. 12-hour reentry. **0-day PHI**.
Quilt Xcel	14 fl oz	12-hour reentry. **0-day PHI**.
Scala SC	9–18 fl oz	Do not apply more than 3 applications alone. **2-day PHI**.
Tilt	4 oz	12-hour reentry. **0-day PHI**.
TopGuard	14 fl oz	Do not use with adjuvants. 12-hour reentry. **7-day PHI**.
Topsin 4.5FL	20–30 oz	Tank-mix with another fungicide. 2-day reentry. **1-day PHI**.
Shothole borer		
Nothing is registered in plums for shothole borer control.		
Aphids (mealy plum and leaf curl plum)		
diazinon 4EC	4 pt	Limited to 1 application per season. **21-day PHI**.
Movento	6–9 oz	**7-day PHI**.
Provado 1.6F	4–8 oz	**7-day PHI**.
Voliam Flexi	0.1–1.75 lb ai/A	**14-day PHI**.
Peach twig borer, leafrollers See materials listed for Popcorn Stage.		
Peachtree borer (see footnote 3, page 8)		
Asana XL	2–5.8 oz/ 100 gal water	Thoroughly apply dilute spray to trunks of trees and scaffold limbs 7–10 days after moths begin flying. **14-day PHI**.
Warrior II	0.02–0.04 lb ai/A	**14-day PHI**.
Earwigs		
Sevin 4F	3–4 qt	Apply to trunks and around tree bases about 30 days before harvest. **3-day PHI**.
Plum rust mite See materials listed for Petal Fall Stage.		

Late Spring and Summer continues on next page

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CONTINUED—Late Spring and Summer		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
San Jose and lecanium scale		
Centaur WDG	34.5–46 oz	**14-day PHI**.
diazinon 4E	4 lb	Time sprays to coincide with crawler emergence, from late June through September. Limited to 1 application per season. **21-day PHI**.
Esteem	13–16 oz	**14-day PHI.**
Spider mites and European red mite		
Acramite 50WS	0.75–1 lb	**3-day PHI**.
Agri-Mek, Epi-mek 0.15 EC	10–20 oz	**21-day PHI**.
Vendex 50WP	1–2 lb	Do not use more than twice per year. Should also provide control of plum rust mites. **14-day PHI.**
Spotted wing drosophila *Note:* Begin monitoring just before fruit starts to change to its ripening color. Insecticides recommended for management of spotted wing drosophila are based on preliminary information and may change after additional research is conducted.		
Baythroid	2.4–2.8 oz	**7-day PHI.**
Danitol 2.4 EC	10.66–21.33 oz	**3-day PHI.**
Delegate WG	4.5–7 oz	Apply no less than 1 week apart, maximum 4 times per season. **7-day PHI**.
diazinon 50WP	4 lb	WPs may leave residues visible at harvest.
Entrust	1.25–2.5 oz	Organic formulation of spinosad. **PHI varies, check the label.**
Imidan 70W	2.1–4.2 lb	**7-day PHI**.
Sevin XLR Plus or Sevin 80WSP	2–3 qt 3 lb	**3-day PHI**.
Success 2L	4–8 oz	**14-day PHI**.
Warrior II	0.02–0.04 lb	**14-day PHI**.
Postharvest		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Shothole borer		
Nothing is registered in plums for shothole borer control.		

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Dormant (Stages 0–1—October and January)		
Pest or disease/ Material	**Amount of product per acre**	**Comments/Reentry interval/Preharvest interval (PHI)**
Dead bud and bacterial canker *Note:* Apply the first spray in October before the fall rains and again in early January. Do not graze sheep in orchards sprayed with coppers.		
bordeaux 12-12-100	See footnote 1, page 8.	—
C-O-C-S WDG	6–12 lb	24-hour reentry.
Copper-Count-N	8–12 qt	12-hour reentry.
Cuprofix Ultra 40 Disperss	5–8 lb	48-hour reentry.
Kocide 3000	3.5–7 lb	Add 1 pt horticultural mineral oil (HMO) per 100 gal water. 48-hour reentry.
Nu-Cop 50 DF	8–16 lb	24-hour reentry.

Footnotes

1. Bacteria resistant to copper products have been detected in many Willamette Valley crops. Thoroughly spray the trunks and lower scaffolds as well as the upper branches. Bordeaux 12-12-100 means 12 lb copper sulfate plus 12 lb hydrated lime in 100 gallons of water. In any bordeaux formula, the ingredients always are listed in the same order—copper sulfate, hydrated lime, then gallons of water.
2. Fungal pathogens have shown resistance to several fungicides when one is used exclusively. Alternate or tank-mix fungicides with different modes of action. Some products may already contain two different fungicides.
3. First spray usually is made in late June or July. If pheromone traps are used to time sprays, make the application 10 to 14 days after the first moths are caught. A second trunk spray may be required 3 weeks after the first.
4. Surface scarring on stone fruits can be the result of many factors. Certain insects such as thrips deform and bronze flower buds and blossoms. Thrips can scar fruit by feeding on or laying eggs in the fruit. Most significant damage usually occurs during and shortly after pollination.

   Lygus and stink bugs also damage stone fruit at this time. Buds are injured, flowers can be sterile, and fruit may be dimpled, distorted, and "pock-marked."

   Damage from the above pests is sporadic and occurs only occasionally in some Valley orchards. Sometimes only portions of orchards or border rows are damaged. Best timing to prevent damage also coincides with pollination periods. Even though some varieties may be wind pollinated, bees can boost yield, often are present, and must be protected. Prebloom and petal fall sprays of Carzol for thrips should be applied in the evening after bee activity.

   Be sure fruit scarring to be prevented is the result of insects before applying these sprays.

5. Do not use Group 11 fungicides in more than two consecutive spray applications. Sprayers used for Abound should **not be used on apples** such as Gala, Cox's Orange Pippin, and McIntosh.

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Table 1. Quick Reference Guide for Herbicides Labeled for Use in Fruit and Nut Crops

- Shaded boxes indicate the herbicide is labeled for use in that crop.
- Nonbearing (NB) indicates the herbicide is labeled only for crops that will not be harvested for 1 year. It has a 365-day preharvest interval.
- For more complete information, please refer to the *PNW Weed Management Handbook*: *http://pnwhandbooks.org/weed/*.

Ingredient common name (herbicide mode of action)	**Product name example**	**Nuts**			**Pome fruits**		**Stone fruits**						**Rates**
		Chestnut	Hazelnut	Walnut	Apple	Pear	Apricot	Cherry	Nectarine	Peach	Plum	Prune	
Applications that persist in soil and are soil active (Herbicides in *bold, italic* type are recommended for new plantings.)													
napropamide (3)	***Devrinol***												5 lb ai/A (50 lb/A Devrinol 10-G)
oryzalin (3)	***Surflan***												2–6 lb ai/A (2–6 qt/A Surflan AS)
pendimethalin (3)	***Prowl***												Prowl H2O: 1.9–6 lb ai/A (2–6.3 qt/A) depending on desired length of weed control and crop
pronamide (3)	***Kerb***												1–4 lb ai/A (2–8 lb/A). Rate depends on species present and soil texture.
trifluralin (3)	***Treflan***												0.5–1 lb ai/A (1–2 pt/A Treflan 4EC)
terbacil (5)	Sinbar					NB	NB	NB			NB		0.4–0.8 lb ai/A (0.5–1 lb/A), newly established; 2–4 lb/A Sinbar, bearing, depending on soil type
simazine (5)	Princep												See product labels for rates. Princep Caliber 90 is a Special Local Needs label (OR-080038) for sweet cherries only.
diuron (7)	Karmex												See label for crop-specific application rates.
norflurazon (12)	Solicam												1.97–7.8 lb ai/A (2.5–10 lb/A Solicam)
dichlobenil (20)	Casoron												4–6 lb ai/A (100–150 lb/A Casoron). Apply in cold, wet weather.
isoxaben (21)	***Trellis***				NB	NB	NB	NB	NB	NB	NB	NB	0.5–1 lb ai/A (0.66–1.33 lb/A product)
indaziflam (29)	Alion												0.065–0.085 lb ai/A (5–6.5 oz/A product) depending on soil texture
trifluralin (3) + isoxaben (21) + oxyfluorfen (14)	Showcase	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	5.5–5 lb ai/A (100–200 lb/A Showcase)

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Ingredient common name (herbicide mode of action)	Product name example	Nuts			Pome fruits		Stone fruits						Rates
		Chestnut	Hazelnut	Walnut	Apple	Pear	Apricot	Cherry	Nectarine	Peach	Plum	Prune	
Applications that persist in soil and have both soil and foliar activity													
penoxsulam (2)	Pindar GT												
rimsulfuron (2)	Matrix												0.063 lb ai/A (4 oz/A Matrix FNV per year)
flumioxazin (14)	Chateau												0.188–0.38 lb ai/A (6–12 oz/A Chateau WDG). Slight differences in rates and uses in SW and WDG labels.
oxyflurofen (14)	Goal												1.25–2 lb ai/A (5–8 pt/A Goal 2XL)
saflufenacil (14)	Treevix												0.045 lb ai/A (1 oz/A Treevix)
Postemergence contact and translocated herbicides													
sethoxydim (1)	Poast										NB	NB	Grass suppression in row middles. 0.28–0.47 lb ai/A (1.5–2.5 pt/A product)
clethodim (1)	Select Max		NB	NB	NB	NB	NB	NB		NB		NB	0.06–0.125 lb ai/A (6–8 oz/A Select)
fluazifop (1)	Fusilade DX		NB	NB	NB	NB							0.25–0.375 lb ai/A (16–24 oz/A Fusilade DX). Refer to specific grassy weeds listed on label.
halosulfuron (2)	Sandea												Apples: 0.035–0.094 lb ai/A (0.75–2 oz/A) Nut crops: 0.031–0.063 lb ai/A (2/3–1 1/3 oz/A)
2,4-D (4)	2,4-D												Green sucker control in hazelnuts. 0.7–0.95 lb ai/A (1.5–2 pt/A Saber)
clopyralid (4)	Stinger												0.12–0.25 lb ae/A (0.33–0.66 pt/A Stinger)
glyphosate (9)	Roundup												General weed control and grass suppression in row middles. Read label carefully for crops listed and geographic location.
glufosinate (10)	Rely												Sucker control. 0.75–1.5 lb ai/A (3–6 qt/A Rely)
carfentrazone (14)	Aim												Green sucker control in hazelnuts. 0.031 lb ai/A (2 fl oz/A Aim EC)
pyraflufen (14)	Vennue												0.7–4 fl oz product/A (0.001–0.006 lb ai/A)
diquat (22)	Reglone		NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	
paraquat (22)	Gramoxone												Green sucker control in hazelnuts. 0.625–1 lb cation/A (2.5–4 pt/A Gramoxone; 1.7–2.7 pt/A Firestorm)
acetic acid	WeedPharm												

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OSU Internet Resources for Plant Protection

Information regarding plant protection is available from several sources at OSU. The following listings are excellent examples:

- OSU Integrated Plant Protection Center. Online weather data and degree day information for insect pests and diseases (*http://uspest.org/wea/*)
- Eastern filbert blight help page—all the information you need for this disease (*http://oregonstate.edu/dept/botany/epp/EFB/*)
- Codling moth development information (*http://ippc2.orst.edu/cgi-bin/ddmodel.pl?clm*)
- Apple scab infection season information (*http://ippc2.orst.edu/cgi-bin/ddmodel.pl?spp=asc*)
- Pear scab infection season information (*http://ippc2.orst.edu/cgi-bin/ddmodel.pl?spp=asp*)
- Pear scab infection period information for the Hood River Valley (*http://ippc2.orst.edu/hr/*)
- Fire blight risk information (*http://ippc2.orst.edu/cgi-bin/ddmodel.pl?fbl*) Directions for the use of each model are available at each site.
- Pacific Northwest Plant Disease Management Handbook (*http://pnwhandbooks.org/plantdisease*)
- Pacific Northwest Insect Management Handbook (*http://pnwhandbooks.org/insect*)
- Pacific Northwest Weed Management Handbook (*http://pnwhandbooks.org/weed*)

Oregon Poison Center
The Oregon Health & Science University
3181 S.W. Sam Jackson Park Road
Portland, OR 97239
Phone: 1-800-222-1222
If a person has collapsed or is not breathing, dial 911.

Basic Elements of Safe Pesticide Use

- Always read the label with care. This is the first step in selecting the right material for the job. Never rely on your memory. Before opening the container, pay strict attention to warnings and cautions printed on the label.
- Keep all pesticide and spray materials out of the reach of children, pets, and irresponsible persons. Storage outside of the home, away from food and feed, and under lock and key is the safest method.
- Store only in the original container and keep tightly closed.
- NEVER smoke, eat, or drink while applying pesticides.
- Avoid inhalation or direct contact. Always wear protective clothing and safety devices as recommended on the label.
- Avoid spills. If spills occur, take immediate action to remove contaminated clothing and wash thoroughly.
- After each application, bathe and change to clean clothing. Wash clothing after each use. Always use fresh clothing when starting new application.
- Avoid contamination of fish ponds and water supplies. Cover feed and water containers when treating around livestock or pet areas.
- Keep separate equipment for use with hormone-type herbicides to avoid accidental injury to susceptible plants. Also avoid applications under wind conditions that could create drift to nontarget areas.
- Rinse empty containers three times before disposing of them. Add the rinse to the spray tank and dispose of containers according to local regulations to avoid hazard to humans, animals, and the environment.
- Follow label directions for mixing and application to keep residues within the limits prescribed by law.
- Plan ahead. Discuss with your physician the materials you will be using during the season so that he or she can be prepared to provide the appropriate treatment in case of accidental exposure. If symptoms of illness occur, call the physician or get the patient to a hospital immediately. Always provide the medical personnel with as much information as possible.
- Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

Prepared by Jeff Olsen, Extension horticulturist, Yamhill County; Jay W. Pscheidt, Extension plant pathology specialist; and Ed Peachey, assistant professor of weed science, Department of Horticulture; all of Oregon State University. The information in this pest management guide is valid for 2013. Trade-name products and services are mentioned as illustrations only. This does not mean that the Oregon State University Extension Service either endorses these products and services or intends to discriminate against products and services not mentioned. Due to constantly changing laws and regulations, the Oregon State University Extension Service can assume no liability for the suggested use of chemicals contained in this guide. Pesticides should be applied according to the label directions on the pesticide container.

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Use only one material except where a combination is indicated. Follow label precautions when tank-mixing oils, fungicides, and insecticides. Materials are not listed in order of preference.