

## Quick Reference Guide to Herbicides Labeled for Use in Pears

Active ingredient [WSSA #] (trade name)	Rate pounds ai/A (product)	Max amount per season (product)	Appl. per year/ Reapply (month)	Minimal Age (month)	Replant (month)	Incorporation (IN/day)	PHI (day)
PRE-EMERGENCE HERBICIDE							
dichlobenil [20] (Casoron 4 G)	4 to 6 lb ai (100 to 150 lb)	6 lb ai (150 lb)	1 / 12	12	12	-/0	30
diuron [5] (Diuron 4L)	1.6 to 3.2 lb ai (1.6 to 3.2 qt)	3.2 lb ai (3.2 qt)	2 / 3	12	24	0.5"/(14)	-
fluridone (12) [Brake On!]	0.19 to 0.40 lb ai (21 to 43 fl oz)	0.4 lb ai (43 fl oz)	1/(2 years)	12	3	0.5"/(-)	30
indaziflam [29] (Alion)	0.04 to 0.08 lb ai (3.5 to 6.5 fl oz)	0.09 - 0.13 lb ai (7.0 - 10.3 fl oz)	2 / 3	12	12	-(21)	14
isoxaben [29] (Trellis SC)	0.5 to 1 lb ai (16 to 31 fl oz)	1.0 lb ai (31 fl oz)	2 / -	0	0	0.5"/(21)	nb
norflurazon [12] (Solicam DF)	1.95 to 3.93 lb ai (2.5 to 5 lb)	3.93 lb ai (5 lb)	/ 12	18	18	0.5-1"/(28)	60
pendimethalin [3] (Prowl H20)	1.9 to 4 lb ai (2 to 4.2 qt)	4 lb ai (4.2 qt)	2 / 1	0	12	1"/(-)	60
pronamide [3] (Kerb 50 W)	1 to 4 lb ai (2.5 to 9.5 pt)	4 lb ai (9.5 pints)	1 / 12	12	0	1-2"/(2)	n/a
simazine [5] (Princep 4L)	2 to 4 lb ai (2 to 4 qt)	4 lb ai (4 qt)	1 / 12	12	12	0.5"/(-)	14
PRE- AND POSTEMERGENCE HERBICIDES							
halosulfuron [2] (Sanda)	0.03 to 0.094 lb ai (0.6 to 2 oz)	0.13 lb ai (2.6 oz)	2 / 1.5	12	9	0.5"/(-)	1
oxyfluorfen [14] (Goal)	0.5 to 2 lb ai (1 to 8 pt)	1.5 to 2 lb ai (6- 8 pints)	1 / -	0	0	0.25"/(21)	60
oxyfluorfen + penoxsulam [14 + 2] (Pindar GT)	1.47+0.03 lb ai (1.5 to 3 pints)	2.2 + 0.04 lb ai (4.5 pints)	- / 1	48	30	0.5"/(21)	60
rimsulfuron [2] (Matrix)	0.03 to 0.06 lb ai (2 to 4 oz)	0.06 lb ai (4 oz)	2 / 1	12	12	0.5"/(14)	7
mesotrione [27] (Broadworks, Motif)	0.09 to 0.18 lb ai (3 to 6 fl oz)	0.36 lb ai (12 fl oz)	3 / 1.5-5	12	18	-(21)	30
POSTEMERGENCE HERBICIDES							
2,4-D [4] (generic)	0.95 to 1.4 lb ai (see label)	2 lb ai (see label)	2 / 2.5	12	1	n/a	14
carfentrazone [14] (Aim EC)	0.01 to 0.03 lb ai (1 to 4 fl oz)	0.079 lb ai (7.9 fl oz)	- / 0.5	0	0	n/a	3

Active ingredient [WSSA #] (trade name)	Rate pounds ai/A (product)	Max amount per season (product)	Appl. per year/ Reapply (month)	Minimal Age (month)	Replant (month)	Incorporation (IN/day)	PHI (day)
	2 fl oz)						
clethodim [1] (Select max)	0.07 to 0.12 lb ai (9 to 16 fl oz)	0.5 lb ai (64 fl oz)	- / 0.5	0	0	n/a	nb
clopyralid [4] (Stinger HL)	0.125 to 0.25 lb ai (0.2 to 0.4 pt)	0.25 lb ai (0.4 pint)	2 / 1	1	12	n/a	30
florpyrauxifen-benzyl [4] (Hulk)	0.018 to 0.03 lb ai (10.5 to 21 fl oz)	0.07 lb ai (42 fl oz)	2/(0.5)	1	-	n/a	60
fluazifop [1] (Fusilade DX)	0.25 to 0.375 lb ai (16 to 24 fl oz)	1.125 (72 fl oz)	3 / 0.5	0	0	n/a	nb
glufosinate [10] (Rely 280 & generic)	0.88 to 1.5 lb ai (48 to 82 fl oz)	4.5 lb ai (246 fl oz)	3 / 0.5	0	6	n/a	14
glyphosate [9] (Roundup Powermax & generic)	0.38 to 3.69 lb ae (11 to 105 fl oz)	7.87 lb ae (224 fl oz)	- / 0.5	0	0	n/a	3
paraquat [22] (Gramoxone SL)	0.625 to 1 lb ai (2.5 to 5 pt)	4 lb ai (20 pints)	5 / 0.5	0	0	n/a	28
pelargonic acid (Scythe)	3 to 10 % v/v	n/a	n/a	n/a	n/a	n/a	1
pyraflufen [14] (Venue)	0.004 to 0.005 lb ai (3 to 4 fl oz)	0.0085 to 0.015 lb ai (6.8 -12 fl oz)	2 or 3/ 1	12	0	n/a	0
saflufenacil [14] (Trevix)	0.04 lb ai (1 oz)	0.13 lb ai (3 oz)	3 / 0.7	1	1	n/a	7
sethoxydim [1] (Poast)	0.19 to 0.47 lb ai (1.5 to 2.5 pt)	1.41 lb ai (7.5 pints)	- / 0.5	0	0	n/a	14
<p>This table was developed as a quick reference. Always consult and follow the label recommendations.  <sup>1</sup>WSSA # to Weed Science Society of America herbicide site of action group number.  Abbreviation: PHI = preharvest interval; nb = nonbearing; n/a = not applicable; "-" = no information</p>							

**Remarks** Consult label for higher rates and application time for perennial weeds. Additional surfactant or ammonium sulfate fertilizer sometimes improves control when weeds are growing slowly. Inhibits production of three amino acids and protein synthesis.

**Caution** If repeat treatments are necessary, do not exceed 10.6 lb ai/A (10.6 quarts) in 1 year. Grazing is prohibited. Repeated use of glyphosate has caused resistant biotypes to develop in some cropping systems.

**Herbicide resistance management** Repeated use of glyphosate in at least one orchard in western Oregon has selected for a resistant biotype of annual ryegrass. Overreliance on herbicides with a single site of action for orchard floor maintenance increases the risk of selecting for resistance in other weed species, and threatens the long-term usefulness of glyphosate for weed control in orchards and other crops. Several alternative, nonselective herbicides, listed below, have different sites of action and can be applied in rotation with glyphosate to reduce the risk of selecting for weeds that are resistant to glyphosate. Refer to "Managing Herbicide to resistant Weeds" in "Section C. Agrichemicals and their Properties" in this handbook for more information.

**Steps to avoid or manage glyphosate resistance**

1. Use other means to manage weeds such as cultivation and mowing in orchards.
2. Use preemergence herbicides where possible. Consider use of other nonselective herbicides such as glufosinate or paraquat with PPO inhibitors for burndown control.
3. To delay development of resistance, use higher glyphosate rates and do not cut the rate.
4. If continuing to use glyphosate in orchards or vineyard with resistant weeds, then tank mix glyphosate with other herbicides and make the application when the weeds are small.
5. Do not let weeds go to seed.