

**Table 20 – Type of Weeds Controlled by Herbicide**

	PRE-EMERGENCE APPLICATION		POST-EMERGENCE APPLICATION		
	Annual Grasses	Broadleaves	Grasses	Broadleaves	Woody
<b>clethodim</b> (Select)			E		
<b>dichlobenil</b> (Casoron)	E	E	Y	Y	
<b>diuron</b> (Direx, Karmex)	E	E			
<b>fluazifop</b> (Fusilade)			E		
<b>glufosinate-ammonium</b> (Rely)			E	E	poison ivy
<b>glyphosate</b> (Roundup, Rattler, Touchdown)			E	E	E
<b>isoxaben</b> (Gallery)		E			
<b>napropamide</b> (Devrinol)	E				
<b>norflurazon</b> (Solicam)	E				
<b>oryzalin</b> (Surflan)	E				
<b>oxyfluorfen</b> (Goal)		E		Y	
<b>paraquat</b> (Gramoxone)			E	E	
<b>pendimethalin</b> (Prowl)	E				
<b>pronamide</b> (Kerb)	E		E		
<b>sethoxydim</b> (Poast)			E		
<b>simazine</b> (Princep, Simazine)	E	E			
<b>snapshot</b> (trifluralin and isoxaben)	E	E			
<b>sulfosate</b> (Touchdown)			E	E	E
<b>terbacil</b> (Sinbar)	E	E	Y	Y	
<b>2,4-D</b> (Amine 4, Saber)			E		

Code: E = Generally effective for this use; Y = Active against young seedlings.

Registrants (manufacturers)

Amine 4: Agrillance, Albaugh, Platte	Gallery: Dow Agrosciences	Prowl: American Cyanamid, BASF	Sinbar: Ondeo Nalco
Casoron: Uniroyal	Goal: Dow Agrosciences	Rattler: Helena	Snapshot: Dow Agrosciences
Clethodim: Valent Biosciences	Gramoxone: Syngenta	Rely: Zeneca	Solicam: Novartis
Devrinol: United Phosphorous, Syngenta	Karmex: Griffin	Roundup: Monsanto	Surflan: Dow Agrosciences
Direx: Griffin	Kerb: Rohm and Haas, Dow Agorosciences	Saber: Several	Touchdown: Syngenta, Zeneca
Fusilade: Syngenta	Poast: BASF, Micro Flo	Select: Valent Bioscience	
	Princep: Novartis	Simazine: Platte	

**Table 21 – Herbicide Options for Different Tree Ages (see Table 22 for full listing of fruit crops)**

HERBICIDE	HERBICIDE GROUP	Year of Planting			Trees one year in the orchard			Trees 2 years or more in the orchard		
		APPLE	PEAR	PEACH	APPLE	PEAR	PEACH	APPLE	PEAR	PEACH
<b>clethodim</b> (Select)	Post G	[3]	[3]	[3]	X	X	X	X	X	X
<b>dichlobenil</b> (Casoron)	Pre G, B	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
<b>diuron</b> (Direx, Karmex)	Pre G, B	X	X	X	[2]	[1]	[1]	[2]	[1]	[1]
<b>fluazifop-butyl</b> (Fusilade)	Post G	[3]	[3]	[1]	[3]	[3]	[1]	[3]	[3]	[1]
<b>glufosinate-ammonium</b> (Rely)	Post G, B	X	X	X	[4]	X	X	[4]	X	X
<b>glyphosate</b> (Roundup)	Post G, B,W	[4]	[4]	[5]	[4]	[4]	[5]	[4]	[4]	[5]
<b>isoxaben</b> (Gallery)	Pre B	[3]	[3]	[3]	X	X	X	X	X	X
<b>napropamide</b> (Devrinol)	Pre G	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
<b>norflurazon</b> (Solicam)	Pre G	[1]	X	X	[1]	[1]	[1]	[1]	[1]	[1]
<b>oryzalin</b> (Surflan)	Pre G	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
<b>oxyfluorfen</b> (Goal)	Pre B	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
<b>paraquat</b> (Gramoxone)	Post G, B	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]
<b>pendimethalin</b> (Prowl)	Pre G	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
<b>pronamide</b> (Kerb)	Pre, Post G	X	X	X	[1]	[1]	[1]	[1]	[1]	[1]
<b>sethoxydim</b> (Poast)	Post G	[1]	[1]	[3]	[1]	[1]	[3]	[1]	[1]	[3]
<b>simazine</b> (Princep, Simazine)	Pre G, B	X	X	X	[1]	[1]	[1]	[1]	[1]	[1]
<b>snapshot</b> (trifluralin + isoxaben)	Pre G, B	[3]	[3]	[3]	X	X	X	X	X	X
<b>sulfosate</b> (Touchdown)	Post G, B,W	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]
<b>terbacil</b> (Sinbar)	Pre G, B	X	X	X	X	X	X	[6]	X	[6]
<b>2,4-D</b> (Amine 4, Saber)	Post B	X	X	X	[4]	[4]	X	[4]	[4]	X

CODES: **Pre** = pre-emergence; **Post** = post-emergence; **G** = grasses; **B** = broadleaf herbs; **W** = woody species.  
**[ ]** = May be used (all brackets). **X** = May not be used.

**1** = Dormant application only.

**2** = Not to be used on M.9 rootstock.

**3** = Non-bearing trees only (no fruit within 1 year).

**4** = Shield trees from spray.

**5** = Do not spray: only wiper equipment for peach, plum, apricot.

**6** = Must not be used on trees established less than 3 years (risk of tree injury).

**Table 22 – Herbicide Summary**

<b>Common Name, Brand Name, Formulation*</b> (see footnote)	<b>Label Rate Per Acre</b>	<b>Crops &amp; Days To Harvest</b>	<b>Signal Word &amp; Restricted Entry Interval</b>	<b>Leaching Potential &amp; Soil limitations &amp; Time Limitations</b>
<b>basamid</b> Basamid Granular	350 pounds (for weeds)	Apple, pear, stone fruits: 365 days	Warning 24 hours (plus tarp removal)	Do not apply where runoff is likely. Apply in fall when soil temperature is 54–64° F. Do not use within 4 feet of growing plants.
<b>Clethodim</b> Select 2EC	6-8 ozs.	Non-bearing apple, pear, peach, cherry	Warning, 24 hours	Apply to actively growing grasses not under stress. Use a non-ionic surfactant at 1 pint per 50 gal, or 1% crop oil concentrate. Do not contact foliage.
<b>dichlobenil</b> Casoron G	100–150 pounds	Apple, pear: 0 days cherry: 30 days	Caution, 12 hours	High leaching on very low-organic soils. Apply November 15–February 15. Quickly lost if applied to warm soil.
<b>diuron</b> Direx, Karmex DF	4 pounds	Apple, pear: 0 days peach: 90 days	Warning, 12 hours	High leaching on low-organic sandy soils. Apple: apply March–May or after harvest. Pear: apply March–May. Peach: apply early spring. Can cause injury on sandy soils and soils of less than 1% organic matter. Activity reduced if more than 5% organic matter. Do not use for apple on full dwarf rootstock.
<b>fluzifop</b> FusiladeDX L	1 pint	Nonbearing apple, pear: 365 days peach, apricot, plum, cherry: 14 days	Caution, 12 hours	Low leaching. Apply during active grass growth.
<b>glufosinate-ammonium</b> Rely L	3–5 quarts	Apple: 14 days	Warning, 12 hours	High leaching. Do not irrigate within 24 hours of treatment.
<b>glyphosate</b> Roundup L	1–5 quarts	Apple, cherry, pear: 14 days Peach, apricot, plum: 17 days	Warning, 12 hours	Low leaching. Quickly inactivated by contact with mineral soil.
<b>isoxaben</b> Gallery 75 DF	0.66 - 1.33 pounds	Non-bearing apple, pear, peach, cherry	Caution 12 hours	Apply late fall/early spring before weed seed germination; allow soil to settle around newly planted trees before application.
<b>napropamide</b> Devrinol 50W 50 DF 10 G	8 pounds 8 pounds 40 pounds	Apple, pear, peach, plum, cherry, apricot: 35 days	Caution, 12 hours	High leaching on low-organic sandy soils. Apply in fall through early spring when ground is not frozen. Incorporate to 2–4" depth within 24 hours. Activity reduced by organic matter. Apply to weed-free soil. Not recommended for soils above 10% organic matter.
<b>norflurazon</b> Solicam DF	2.5–3.7 pounds	Apple, pear, peach plum, apricot, cherry: 0 days	Caution, 12 hours	High leaching on low-organic soils. Apply fall to early spring before weeds emerge. Activity reduced by organic matter.
<b>oryzalin</b> Surflan AS, L	2–6 quarts	Apple, pear, peach, apricot, plum, cherry: 0 days	Caution, 12 hours	Low leaching except on very low-organic soils. Activity reduced if soil is more than 5% organic matter.

\*AS = aqueous solution; DF = dry flowable; G = granule; L = liquid; W = wettable powder; WSP = Water soluble powder

**Table 22 – Herbicide Summary (cont.)**

<b>common name, Brand Name, formulation* (see footnote)</b>	<b>Label rate per Acre</b>	<b>Crops &amp; Days to harvest</b>	<b>Signal word &amp; Restricted entry interval</b>	<b>Leaching potential &amp; Soil limitations &amp; Time limitations</b>
<b>oxyfluorfen</b> Goal 2XL	2.0–8.0 pints	Apple, pear, peach, plum, apricot, cherry, quince: 0 days	Warning, 24 hours	Low leaching. Apply in dormant season before bud swell. Not affected by soil organic matter.
<b>paraquat</b> Gramoxone Extra L	2–3 pints	Apple, pear, peach, apricot, cherry: 0 days plum: 28 days	Danger, 24 hours	Low leaching. Apply during active weed growth.
<b>pendimethalin</b> Prowl 3.3 EC	2.4–4.8 quarts	Nonbearing apple, pear, peach, apricot, plum, cherry: 365 days	Caution, 12 hours	Low leaching. Do not use on peat or muck soils.
<b>pronamide</b> Kerb 50 W	2–8 pounds	Apple, pear, peach, plum, cherry: 0 days	Caution, 24 hours	Low leaching. Apply after harvest before leaf drop. Activity reduced if soil organic matter is more than 4% . Remove surface litter.
<b>sethoxydim</b> Poast L	1.5–2.5 pints	Apple, pear, quince: 14 days Nonbearing plums and prunes: 365 days	Warning, 12 hours	Low leaching if soil organic content is more than 1%. Apply during active growth of grasses.
<b>simazine</b> Princep Caliber 90 DF Princep Caliber 4L Simazine 90 DF Simazine 4 L	2.2–4.4 pounds 2–4 quarts 2.2–4.4 pounds 2–4 quarts	Apple, pear, peach, plum, cherry: 0 days	Caution, 12 hours	High leaching on loamy sand of low organic content. For stone fruits, apply late fall to early spring (prior to weed emergence). Do not use on gravelly, sandy, or loamy sand soil.
<b>sulfosate</b> Touchdown 5	1.6 pints/ Acre	Apple, pear: stone fruits: 13 days	Caution, 13 hours	Low leaching. Quickly inactivated by contact with mineral soil.
<b>terbacil</b> Sinbar W	2–4 pounds	Apple, peach: 0 days	Caution, 12 hours	High leaching potential. Apply in the spring or after harvest in the fall before weeds emerge, or during early seedling stage. Do not use on gravelly, sand, or loamy sand soils; on soils with less than 1% organic matter or where tree roots are exposed.
<b>trifluralin + isoxaben</b> Snapshot 2.5 TG	100-200 pounds	Non-bearing apple, pear, peach, cherry	Caution, 12 hours	Apply any time prior to germination of target weeds or immediately after cultivation
<b>2,4-D</b> Amine 4, Saber	3 pints	Apple, pear: 14 days	Danger, 48 hours	High leaching on bare ground. Do not use on light sandy soil. Do not apply on bare ground. Do not apply during bloom. Minimum 75-day interval between applications.