

for those with less than 50% ai. For best results, mow grass in spring for uniformity, then apply appropriate rate 3 or 4 days after mowing. Low rates will not adequately suppress broadleaf weeds such as dandelion or plantain. If broadleaf weeds infest more than 10% of ground cover, tank mix 2,4-D labeled for orchard use.

Caution Chemical mowing is not recommended if orchard weed management is primarily reliant on glyphosate. Low rates of glyphosate applied multiple times per year may significantly increase the chance of selecting glyphosate resistant populations. Do not treat grass covers under poor conditions such as drought stress (drip irrigation), disease, or insect damage; suppression may be poor.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

sethoxydim (Poast)

Rate 0.09 lb ai/a (0.5 pint/a Poast)

Time Apply to grasses in orchard floor middles one time only, to suppress growth.

Site of action Group 1: acetyl CoA carboxylase (ACCase) inhibitor

Chemical family Cyclohexanedione

2,4-D amine (Saber, Weed Rhap A-4D, or Dri-Clean Herbicide)

Rate 0.95 to 1.4 lb ae/a (2 to 3 pints/a Saber for stone fruits and nuts only); 3 pints/a for Weed Rhap A-4D)

Time Do not apply during bloom. Preferred timing is late autumn, after harvest but before first frost. Apply after irrigation rather than before, to avoid moving the herbicide into the

root zone. Apply as a directed spray as needed to young, actively growing weeds in the prebud to early bud stage of growth.

Remarks Apples and pears: Minimize use in pears after fruit set due to possibility of early ripening. Apparently, Gala, Fuji, and Golden Delicious apples are more sensitive to 2,4-D than are other cultivars. Do not allow spray to contact pear leaves, fruit, tree trunks, or root suckers. Preharvest interval is 14 days. Stone fruits and nuts: 2,4-D can be applied up to twice per season. Preharvest interval is 40 days for stone fruits, 60 days for nuts. Application timing on other fruits and nuts excludes preharvest interval requirements. Mimics natural plant hormones.

Caution Avoid high pressures or other factors that can increase drift. Reduce possible root uptake by avoiding irrigation or rain within 10 days after application. Do not use on light, sandy, or bare soils. Do not use when temperatures exceed 90°F. Do not graze or feed cover crops from treated areas to livestock.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid

Abandoned orchards—Treating Unwanted Trees

triclopyr + 2,4-D (Crossbow)

Washington only

Rate Washington special local needs label only (WA-130001). Consult label for mixing and application rate instructions for basal application or hack-and-squirt methods.

Caution Do not replant susceptible broadleaf trees within 12 months of application.

Site of action (both) Group 4: synthetic auxin

Herbicide Effectiveness on Weeds in Tree Fruits

WEED FAMILY ¹	Soil-applied Herbicides											Postemergent Herbicides				
	simazine	diuron	terbacil (Sinbar)	norflurazon (Solicam)	dichlobenil (Casoron)	oryzalin (Surflan)	napropamide (Devrinol)	pronamide (Kerb)	flumioxazin (Chateau)	indaziflam (Allion)	paraquat (Gramoxone)	oxyfluorfen (Goal)	glyphosate (Roundup)	2,4-D (weed-Rhap)	fluzifop (Fusilade)	sethoxydim (Poast)
AMARANTH OR PIGWEED																
Amaranth, Powell <i>Amaranthus powellii</i>	G	G	F		G	G	G		G	G	G		G	G	P	P
Pigweed, redroot <i>Amaranthus retroflexus</i>	G	G	F	F	G	G	G	P	G	G	G	G	G	G	P	P
Pigweed, tumble <i>Amaranthus graecizans</i>	G	G	F		G		G		G	G	G		G	G	P	P
BUCKWHEAT																
Buckwheat, wild <i>Polygonum convolvulus</i>	G	G	G		G				P	P	G	G	G	G	P	P
Dock, broadleaf (P) <i>Rumex obtusifolius</i>		F*	G*		G	P			P	P	+		G	G	P	P
Dock, curly (P) <i>Rumex crispus</i>					G			F	P	P		F			P	P

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	simazine	diuron	terbacil (Sinbar)	norflurazon (Solicam)	dichlobenil (Casoron)	oryzalin (Surflan)	napropamide (Devrinal)	pronamide (Kerb)	flumioxazin (Chateau)	indaziflam (Alion)	paraquat (Gramoxone)	oxyfluorfen (Goal)	glyphosate (Roundup)	2,4-D (weed-Rhap)	fluzafop (Fusilade)	sethoxydim (Poast)
Knotweed, prostrate <i>Polygonum aviculare</i>	G	F	G	G	G	G	F	F	F	G	+	F	G	F	P	P
Ladysthumb <i>Polygonum persicaria</i>	F	F	G	F	G	F	P		F	G	G	F	G	G	P	P
Sorrel, red (P) <i>Rumex acetosella</i>		G*	G*		G			F	P	G	+	G*	G		P	P
CALTROP																
(Puncturevine) <i>Tribulus terrestris</i>	P	P	F	G	G	F	F		F	F	G		G	G	P	P
CARROT																
Carrot, wild (B) <i>Daucus carota</i>	G	G	G	G	G			P	F	G	G	P	G	G	P	P
COMPOSITE																
Chicory (P) <i>Cichorium intybus</i>					G			P		G					P	P
Cocklebur, broadleaf <i>Xanthium strumarium</i>					F			P				G*	G	G	P	P
Cudweed, low <i>Gnaphalium uliginosum</i>					G			P					G	G	P	P
Dandelion, common (P) <i>Taraxacum officinale</i>	*	P	F	*	G	P	*	P		P	+	G*	G	G	P	P
Dandelion, false (Spotted catsear) (P) <i>Hypochaeris radicata</i>	*	P	P	*	G	P	P	P		P	+	G*	G	F	P	P
Devil's beggarsticks <i>Bidens frondosa</i>		G	F		G			P							P	P
Goldenrod, western (P) <i>Solidago occidentalis</i>		P	P			P	P	P			P		G		P	P
Groundsel, common <i>Senecio vulgaris</i>	F	F			G	P	G	P	G	G	G	G	G	G	P	P
Hawkbit, hairy (P) <i>Leontodon nudicaulis</i>	*	*	*	*	G	*	*	P			+		G	P	P	P
Hawksbeard, bristly <i>Crepis setosa</i>			G		G		P	G		G	G	G	G	P	P	P
Horseweed (P) <i>Conyza canadensis</i>		F	P		F	P	F	P	G	G	+	P	G		P	P
Knapweed, diffuse <i>Centaurea diffusa</i>					G			P					G	G	P	P
Mayweed or dog fennel <i>Anthemis cotula</i>		G	G		G	P		P	G	G	*	F	G	F	P	P
Pineappleweed <i>Matricaria matricarioide</i>		G	G		G	P	G	P	G	G	*	F	G	F	P	P
Prickly lettuce <i>Lactuca serriola</i>		G	G		G	P	G	P	G	G	G	G	G	G	P	P
Ragweed, common <i>Ambrosia artemisiifolia</i>					G			P	G			*	G	G	P	P
Ragwort, tansy (B) <i>Senecio jacobaea</i>		P	P		G	P	P	P	P	P	*		G	G	P	P
Salsify, western (B) <i>Tragopogon dubius</i>		P	P			P	P	P			F	P		G	P	P

WEED FAMILY ¹	Soil-applied Herbicides											Postemergent Herbicides				
	simazine	diuron	terbacil (Sinbar)	norflurazon (Solicam)	dichlobenil (Casoron)	oryzalin (Surflan)	napropamide (Devrinol)	pronamide (Kerb)	flumioxazin (Chateau)	indaziflam (Alion)	paraquat (Gramoxone)	oxyfluorfen (Goal)	glyphosate (Roundup)	2,4-D (weed-Rhap)	fluzafop (Fusilade)	sethoxydim (Poast)
Sowthistle, annual <i>Sonchus oleraceus</i>		F	G		G	P	G	P	G	G		G	G	G	P	P
Sowthistle, spiny <i>Sonchus asper</i>		F	G		G	P	G	P		G		G	G	P	P	
Thistle, bull (B) <i>Cirsium vulgare</i>		G	F		G			P		G	P	F*	G	G	P	P
Thistle, Canada (P) <i>Cirsium arvense</i>		P	P		G	P	P	P	P	P	+		G	F	P	P
EVENING PRIMROSE																
Fireweed (P) <i>Epilobium angustifolium</i>		G	G		F		P		F	G	G	G	G	F	P	P
FIGWORT																
Mullein, common (B) <i>Verbascum thapsus</i>		P			G			P			F		F	F	P	P
Speedwell, birdseye <i>Veronica persica</i>		P	F		G			P		G	G		G	F	P	P
Speedwell, creeping <i>Veronica filiformis</i>					F			P					G	F	P	P
Speedwell, ivyleaf <i>Veronica hederifolia</i>		P	F		F			P		G	G	G	G	F	P	P
Toadflax, yellow (P) <i>Linaria vulgaris</i>		P	P		P		P	p			p			p	p	p
GERANIUM																
Filaree, redstem <i>Erodium cicutarium</i>	P	F	G	G	G	P	G	P	F	G	F	G	G	G	P	P
Geranium, cutleaf <i>Geranium dissectum</i>		G	G		G		G	P	F	G	G		G	F	P	P
Geranium, dovefoot <i>Geranium molle</i>		G	G		G		G	P	F	G	G	F	G	P	P	P
GOOSEFOOT																
Kochia <i>Kochia scoparia</i>		F	G		G	P	P	F		G	F	G	G	F	P	P
Lambsquarters, common <i>Chenopodium album</i>	G	G	G	G	G	G	G	F	G	G	F	F	G	G	P	P
Thistle, Russian <i>Salsola kali</i>		P	F	G	G	F	P	P	G	G	F	G	G	F	P	P
GRASS, ANNUAL																
Barnyardgrass <i>Echinochloa crustogalli</i>	F	G	F	G	G	G	F-G	P	P	G	G	P	G	P	G	G
Bluegrass, annual <i>Poa annua</i>	G	G	G	G	G	G	G	G	F	G	G	F*	G	P	P	P
Brome, downy <i>Bromus tectorum</i>	G	P	G	G	G	G	F-G	G		G	G	F#	G	P	G	G
Brome, ripgut <i>Bromus rigidus</i>	G	G	G		G	G	G	G		G	G	F#	G	P		
Bromes, annual <i>Bromus</i> spp.				G		G	G	G		G	G	F#	G	P	G	G
Crabgrass <i>Digitaria</i> spp.	P-F	F-G	G	F	G	G		P	P	G	G		G	P	G	G

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	simazine	diuron	terbacil (Sinbar)	norflurazon (Solicam)	dichlobenil (Casoron)	oryzalin (Surflan)	napropamide (Devrinol)	pronamide (Kerb)	flumioxazin (Chateau)	indaziflam (Alion)	paraquat (Gramoxone)	oxyfluorfen (Goal)	glyphosate (Roundup)	2,4-D (weed-Rhap)	fluzafop (Fusilade)	sethoxydim (Poast)
Foxtail, green <i>Setaria viridis</i>	P-F	F	F	F	G	G	F	F		G	G	F#	G	P	G	G
Foxtail, yellow <i>Setaria glauca</i>		F	F		G	G	G	F		G	G	F#	G	P	G	G
Johnsongrass seedlings <i>Sorghum halepense</i>					G				P	P	G		G	P	G	G
Oat, wild <i>Avena fatua</i>	F	P	G	G	F	P	G	G	P	G	G	G#	G	P	G	G
Ryegrass, annual or Italian <i>Lolium multiflorum</i>	G	G	G		G	G	G	G	P	G	G	G#	G	P	F-G	G
Sandbur, longspine <i>Cenchrus longispinus</i>	F	F	F	F		G	G				F		G	P		
Velvetgrass <i>Holcus lanatus</i>		P	G		G		P	G		G	F		G	P	F-G	G
Witchgrass <i>Panicum capillare</i>		P	G		G	G	G	F	F	G	G		G	P	G	G
GRASS, PERENNIAL																
Bentgrass <i>Agrostis tenuis</i>	*	*	F*	*	G	*	*	G		G	+		G	P	G	G
Bermudagrass <i>Cynodon dactylon</i>		P	P			P	P	P		G	P	G	G	P	G	F-G
Fescue, red creeping <i>Festuca rubra</i>					F			G		G			G	P	P	P
Quackgrass <i>Elytrigia repens</i>	P	P	F	P	G	P	P	G		P	F	P	G	P	F	P
MADDER																
Bedstraw, catchweed <i>Galium aparine</i>		P	P		G	F		P			P	G*		P	P	P
Bedstraw, corn <i>Galium tricornis</i>				G										P	P	P
MALLOW																
Mallow, common <i>Malva neglecta</i>	F	P	G	F	F	P	G	P		F		P	F	F	P	P
MINT																
Deadnettle, red <i>Lamium purpureum</i>	G	G	F	G	G		P	F			G	G	G	F	P	P
Henbit <i>Lamium amplexicaule</i>	G	G	F	G	G	F	P	F			G	G	G	F	P	P
MORNINGGLORY																
Bindweed, field (P) <i>Convolvulus arvensis</i>	P	P	P		P-F	P	P	P		P	+	+	F-G	F	P	P
MUSTARD																
Bittercress, little <i>Cardamine oligosperma</i>		G	G		G	P	G	P	G	G	G	G	G	G	P	P
Cress, hoary (P) <i>Cardaria draba</i>	*	*			G									F	P	P
Flixweed <i>Descurainia sophia</i>		G	G			P	F	F#				F		G	P	P

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Mustard, hedge <i>Sisymbrium officinale</i>	*	*	G		F-G	P		F#	G	G		F	G	G	P	P
Mustard, wild <i>Brassica kaber</i>	G	G	G	G	G	G	G	F#	G	G	G	F	G	G	P	P
Shepherdspurse <i>Capsella bursa-pastoris</i>	G	G	G	G	G	P	P	F#	G	G	G	P	G	G	P	P
NIGHTSHADE																
Nightshade, black <i>Solanum nigrum</i>	G	G	G	G	G	P	P	F#	E	G	G	G	G	G	P	P
Nightshade, cutleaf <i>Solanum triflorum</i>		G	G		G			F#	E	G	G	G	G	G	P	P
Nightshade, hairy <i>Solanum sarrachoides</i>	G	G	G	G	G	P	P	F#	E	G	G	G	G	G	P	P
PINK																
Chickweed, common <i>Stellaria media</i>	G	G	G		G	G	G	G	G	G	G	P	G	G	P	P
Chickweed, mouseear <i>Cerastium vulgatum</i>	G	G	G		G	G	G	G	G	G	G	P	G	F	P	P
Spurry, corn <i>Spergula arvensis</i>	G	G	G		G	G	G		G	G	G	G	G	P	P	P
PLANTAGINACEAE																
Plantain, broadleaf (P) <i>Plantago major</i>	G	P	G		G			P			G	F*	G	G	P	P
Plantain, buckhorn (P) <i>Plantago lanceolata</i>	G	P	G		G			P			G	F*	G	G	P	P
PURSLANE																
Minerslettuce <i>Montia perfoliata</i>	G	G	G	G	G		P				G	G	G	G	P	P
Purslane, common <i>Portulaca oleracea</i>	G	G	G	F	G	G	G	F	E	G	G	G	G	F	P	P
ROSE																
Blackberry, evergreen (P) <i>Rubus laciniatus</i>	P	P	F		P	P	P	P	P	P	+	P	G	F	P	P
Blackberry, Himalaya (P) <i>Rubus procerus</i>	P	P	F		P	P	P	P	P	P	+	P	G	F	P	P
Blackberry, trailing (P) <i>Rubus vitifolius</i>	P	P	F		P	P	P	P	P	P	+	P	G	F	P	P
SEDGE																
Nutsedge, yellow (P) <i>Cyperus esculentus</i>	P	P	P	F	G	P	P	P	P	P	F	P	F	P-F	P	P
SPURGE																
Spurge, leafy (P) <i>Euphorbia esula</i>					G			P	P	P		P		P-F	P	P
Spurge, prostrate <i>Euphorbia humistrata</i>	P	P	G	F	G	F	P		G	P	G		G	F	P	P
St. Johnswort (P) <i>Hypericum perforatum</i>		P	P		G		P		P	P	+		G	F	P	P

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SUMAC																
Poisontoak, Pacific (P) <i>Toxicodendron diversilobum</i>		P	P		G		P			P	+		G	F	P	P
TEASEL																
Teasel <i>Dipsacus sylvestris</i>					G					P	G		G	G	P	P

G = good (80-94%) F = fair (60-79%) P = poor (less than 50%)(*) = seedling control only
 (+) = controls aboveground vegetation only (#) = preemergence only
¹Weeds not identified as biennials (B) or perennials (P) are considered annuals.

Sucker Chemical Pruning Herbicide Efficacy as Affected by Sucker Height

Active ingredient [WSSA #] (trade name)	Rate pounds ai/a (product/a)	Efficacy Rating		
		3"	6"	9"
2,4-D [4] (generic)	0.71 to 0.95 lb ai (see label)	E	E	G
carfentrazone [14] (Aim EC)	0.03 lb ai (2 fl oz)	E	G	F
glufosinate [10] (generic)	1.0 lb ai (56 fl oz)	E	E	G
paraquat [22] (generic)	0.625 to 1 lb ai (2.5 to 5 pints)	E	E	F-G
pelargonic acid (Scythe)	5 to 7% v/v	NR	NR	NR
pyraflufen [14] (Venue)	0.002 to 0.005 lb ai (2 to 4 fl oz)	-	NR	NR
saflufenacil [14] (Treevix)	0.04 lb ai (1 oz)	E	G	F

WSSA # to Weed Science Society of America herbicide site of action group number.
 Abbreviations: E – excellent (>90% control); G – good (80-90% control); F – fair (70-80%), NR – not recommended