

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
<b>BRUSH CONTROL</b>				
Imazapyr @ 0.25 to 0.75 lb/A	Persimmon, sassafras, oak, hickory, sweetgum.	<b>Arsenal</b> 1% solution.	May to September.	Add 0.5% surfactant. No grazing restrictions. Will kill grass. Do not exceed 48 oz per acre.
2,4-D + picloram @ 2 + 0.54 lb/A	Buckbrush, honeylocust, multiflora rose, some oaks, persimmon, prickly pear cactus.	<b>Grazon P+D</b> 4 qt/A.	At full leaf-out in May or June.	Use high rate for prickly pear control. Results are very slow. Evaluate one year after application. Add 0.5% nonionic surfactant. Tank mix Grazon P+D with 1 qt/A or 0.5% Remedy or for broad spectrum mixed brush control. Adding Remedy may improve honeylocust control. Use 1 to 2% solutions for hand-held equipment.
picloram @ 0.25 to 0.5 lb/A	Prickly pear cactus, persimmon, honeylocust.	<b>Tordon 22K</b> 1 to 2 pt/A.	Treat prickly pear in early May. Treat persimmon or honeylocust in May or June.	Read the entire label carefully before using picloram. We recommend that it be used as a spot treatment (see label) rather than broadcast application. Do not exceed 1 quart of Tordon 22K per acre per season. Picloram is a chemical which can travel (seep or leach) through soil and under certain conditions has the potential to contaminate groundwater which may be used for irrigation and drinking purposes. Users are advised not to apply picloram where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow or to soils containing sinkholes over limestone bedrock, severely fractured surfaces and substrates which would allow direct introduction into an aquifer. Your local county Extension office can provide further information on the type of soil in your area and the location of groundwater.
picloram + fluroxypyr @ 0.22 + 0.18 to 0.9 to 0.72 lb/A	Horsenettle, hemp dogbane, ragweed, thistles, etc., and also for many brush species, including blackberry and multiflora rose. Will not control any grass weeds or sedges.	<b>Surmount</b> 1.5 to 2 pt/A for general broadleaf control. 3 to 6 pt/A for brush control.	During active weed growth. Blackberry and multiflora rose are best controlled when they have not been mowed for at least one year.	New legume seedlings may not be successful if planted within 1 year after applying herbicide. Consult label for specific recommendations. Using a surfactant will improve the performance of this herbicide.

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triclopyr @ 0.75 to 1.5 lb/A	Blackberries, buckeye, oaks, willow, pine, sumac, osage orange, sweetgum, mixed brush.	<b>Remedy Ultra</b> 1.5 to 3 pt/A.	Apply during good growing conditions. Blackberries: flowering through mid-July, leaves must be fully developed on fruiting canes. May through June for general foliar use. Treat cut stumps when fresh, make basal bark applications during dormant season.	Use a 0.5 to 1% solution for hand equipment applications. Add 0.5% nonionic surfactant. Follow-up applications will be needed for control of most species. Tank mix with 1 gallon per acre or 2% Grazon P+D for broader spectrum brush control.
metsulfuron @ 0.038 lb/A	Blackberry, dewberry, <i>Sericea lespedeza</i> , honeysuckle.	<b>Metsulfuron 60DF</b> 1.0 oz/A.	Postemergence.	Add 0.25% nonionic surfactant. Will stunt fescue. Do not spray ryegrass or legume pastures.
fluroxypyr + triclopyr @ 0.5 to 2.0 lb/A	Many broadleaf herbaceous and woody plants.	<b>PastureGard HL</b> 1 to 4 pt/A.	Postemergence.	A more concentrated version of PastureGard. Do not use more than 2 qt/A in a single growing season. Do not harvest hay for 14 days after application. Do not graze lactating dairy cows during the growing season of application. Withdraw animals from treated pasture 3 days before slaughter.
metsulfuron + aminopyralid + triclopyr + fluroxypyr @ 0.019 + 0.1 + 0.38 + 0.125 lb/A	Many brush species and broadleaf weeds.	<b>Chaparral + PastureGard HL</b> 3.3 oz + 1 pt/A	May to September.	Will kill bahiagrass. Does not contain picloram. Add 0.5% nonionic surfactant.
aminopyralid + 2,4-D + triclopyr ester @ 0.1 + 0.8 + 1.0 lb/A	Many brush species and broadleaf weeds.	<b>GrazonNext HL + Remedy Ultra</b> 2.0 + 2.0 pt/A	May to September.	Provides brush control without the use of picloram. Add 0.5% nonionic surfactant.
glyphosate @ 2 to 5 lb/A	Blackberry, honeysuckle, kudzu, multiflora rose, poison ivy, trumpet creeper.	<b>Glyphosate (4 lb/gal formulations)</b> 2 to 5 qt/A.	Late fall to early summer before leaf color changes. Do not apply to drought-stressed or dusty brush.	Use a 2% solution for spot treatment. Add 0.5% nonionic surfactant. Follow-up treatment will be needed. Will kill grass.
tebuthiuron @ 2 to 4 lb/A	Buckbrush, red cedar, elms, hickory, honeylocust, honeysuckle, oaks, pines, sweetgum.	<b>Spike 20P</b> 10 to 20 lb/A.	Can be applied any time. Late winter and early spring applications perform the best. Needs rainfall for activation.	Soil-applied only. May take up to 3 years for complete kill. Do not use on soils with a high clay content. Persimmon and sassafras are not controlled. Do not apply where the roots of desirable vegetation extend. Root spread of trees may be triple the crown width. Will injure grass. Apply during the dormant season. Do not apply when the soil is frozen or snow-covered. Do not apply to red cedar over 6 feet tall.

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<b>BRUSH CONTROL [cont.]</b>				
hexazinone @ 0.66 lb/A	Red cedar, elms, honeysuckle, hickory, oaks.	<b>Velpar L</b> 2 to 4 milliliters per stem up to 1/3 gal/A.	Can be applied any time. Late winter and early spring applications perform the best. Needs rainfall for activation.	Soil-applied only. Do not use on soils with a high clay content. Persimmon and sassafras are not controlled. Do not apply where the roots of desirable vegetation extend. Will injure grass. Apply during the dormant season. Do not apply when the soil is frozen or snow-covered. Do not apply to red cedar over 6 feet tall. Apply to soil at base of stem with a spotgun. Do not exceed 1/3 gal per acre per season or treat more than 709 brush plants per acre per season.
2,4-D + dicamba @ 1.4 + 0.5 lb/A	Buckbrush, hawthorn, black locust, sumac, willows.	<b>Weedmaster</b> 2 qt/A, or 32-48 oz.	At full leaf-out in spring.	Effective on a limited number of brush species. Contains amine 2,4-D. Follow-up treatments are usually needed. Use 2% solution for hand equipment applications. Add 0.5% nonionic surfactant.
2,4-D ester @ 2 to 4 lb/A	Buckbrush, black locust, hawthorn, sumac, willows.	<b>2,4-D</b> 2 to 4 qt/A or 32 to 48 oz/A.	At full leaf-out in spring.	Ester formulations more readily penetrate the leaves of brush species. Effective on a limited number of brush species. Follow-up treatments are usually needed. Use 2% solution for hand equipment applications. Add 0.5% nonionic surfactant. Some studies have shown the amine formulation to be more effective on buckbrush.
<b>ALFALFA</b>				
<b>Postemergence</b>				
2,4-DB amine @ 1 lb/A	Broadleaf weeds.	<b>Butyrac 200/Butoxone</b> 2.3 qt of 1.75 lb/gal 2,4-DB or 2 qt of 2 lb/gal.	When alfalfa seedlings are 3 inches or following hay harvest before new growth starts.	AVOID DRIFT. Best applied to very small weeds, 2 to 6 leaves.
imazethapyr 0.047 to 0.094 lb/A	Foxtails, chickweed, cocklebur, mustards, shepherdspurse.	<b>Pursuit 70 DG</b> 1.08 to 2.16 oz/A.	Postemergence to seedling alfalfa when the weeds are in the 1- to 3-inch size range.	Apply to alfalfa that has reached the second trifoliolate or later. Pursuit may be tank mixed with other herbicides. Add crop oil concentrate and UAN at 1 qt/A.
imazamox @ 0.03 to 0.04 lb/A	Annual grasses and some broadleaf weeds.	<b>Raptor 1L</b> 4 to 6 oz/A.	Early postemergence while the weeds are actively growing and before they exceed 3 inches.	Alfalfa should have at least two trifoliate before applying Raptor. For weeds such as mustards with a prostrate growth habit, apply before the rosette exceeds 3 inches. Raptor may cause temporary stunting.

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clethodim @ 0.094 to 0.125 lb/A	Crabgrass, fall panicum, foxtails, johnsongrass.	<b>Select 2E</b> 6 to 8 oz/A.	Postemergence.	See label for weed sizes and rates. Allow time for regrowth if applying after harvest. Add crop oil concentrate at 1 qt/A.
sethoxydim @ 0.2 to 0.3 lb/A	Annual grasses and johnsongrass.	<b>Poast 1.5 EC</b> 1 to 2.5 pt/A. Use low rate for small annual grasses, high rate for johnsongrass.	Small annual grasses. Johnsongrass 15" to 20". Do not apply to grass under stress.	See comments for Poast in soybean section. Do not apply more than 5 pt/A per year. Split application most effective for johnsongrass. 1.5 pt/A followed by 1 pt/A.
glyphosate @ 0.7 to 1.4 lb/A	Many broadleaf and grass weeds.	<b>Glyphosate 4 lb/gal</b> 22 to 44 oz/A.	Postemergence.	For use with Roundup Ready Alfalfa. Do not exceed 44 fl oz/A in a single application. May be used from emergence to 5 days before cutting. Wait at least 7 days between applications. Do not exceed 132 oz/A per growing season. Remove livestock before application and do not graze for 5 days. Make a 22 oz/A application during establishment before the 3 to 4 trifoliolate stage to eliminate non Roundup Ready seedlings. In established stands, make weed control applications while the weeds are exposed and not hidden by alfalfa regrowth.

## ALFALFA

### Preemergence and Postemergence

terbacil @ 0.5 lb/A	Postemergence control of winter weeds, also preemergence control of summer annual grass and broadleaf weeds.	<b>Sinbar 80W</b> 0.6 lb/A.	In late winter or early spring <b>before</b> alfalfa breaks dormancy.	Treat only stands established for one year or more. Do not use on alfalfa-grass mixture.
diuron @ 1.2 to 2.4 lb/A	Winter annuals.	<b>Karmex 80 DF</b> 1.5 to 3.0 lb/A.	While alfalfa is dormant.	Treat only stands established for one year or more. Do not treat alfalfa under stress.
metribuzin @ 0.38 to 0.75 lb/A	Winter annuals.	<b>Sencor 75 DF</b> 0.5 to 1.0 lb/A.	While alfalfa is dormant.	Treat only stands established for one year or more. Do not treat alfalfa under stress.
pronamide @ 0.5 to 0.75 lb/A	Winter grasses and some winter broadleaves.	<b>Kerb 50W</b> 1 to 1.5 lb/A.	Apply during the fall or winter months. Has preemergence and post-emergence activity.	Do not use on legumes before the first trifoliolate stage. See label for particulars.
hexazinone @ 0.5 to 1.5 lb/A	Most winter broadleaves and some winter grasses.	<b>Velpar L</b> 1 to 3 qt/A.	Treat while crop is dormant.	Treat only healthy stands established one year or more. Do not use on sandy loams or loamy sands with less than 1% organic matter. Do not exceed 1 qt/A on sandy loams or loamy sands with 1 to 2% organic matter.

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<b>CLOVER: RED, ALSIKE, LADINO</b>				
<b>Postemergence</b>				
2,4-DB amine @ 1 lb/A	Annual grasses and broadleaf weeds.	<b>Butyrac, Butoxone</b> 2.3 qt/A of 1.75 lb/gal 2,4-DB or 2 qt/A of 2 lb/gal.	When legumes (seedlings or established stands) have two or more true leaves with weeds in seedling stage.	Best control is achieved with weeds in the 2- to 4-leaf stage. Will not control henbit or chickweed.
sethoxydim @ 0.31 lb/A	Most grasses.	<b>Poast 1.5 EC</b> 2.5 pt/A.	Postemergence.	For use on established stands of clover. See label for specific grass weed information. Do not spray drought-stressed weeds. Add surfactant or crop oil concentrate.
<b>MISCANTHUS, OTHER BIO-FUEL CROPS</b>				
<b>Post Sprigging</b>				
glyphosate @ 1 lb/A	Emerged weeds.	<b>Glyphosate (4 lb/gal formulations)</b> 32 oz/A.	Preplant for vegetation knockdown.	Apply immediately after sprigging – no green miscanthus leaves.
acetochlor @ 1.5 lb/A	Small-seeded grass and broadleaf weeds.	<b>Degree 3.8 EC</b> 3.2 pt/A.	Apply at planting up to early post. Residual control only.	Do not exceed 6.4 pints per year. Do not graze treated forage or use for hay.
acetochlor + atrazine @ 1.11 to 1.5 + 0.55 to 0.74 lb/A	Same as above plus post broadleaf activity and better residual control.	<b>Degree Xtra 4L</b> 3.3-4.4 pt/A.	Apply at planting or when miscanthus is 2 to 3 inches tall.	Do not exceed 8.8 pt/A per year. Do not graze or feed.