

## Forages: Alfalfa and Other Legumes

Legume seedlings are relatively slow growing, whereas weeds often have a rapid initial growth period. Thus, in new seedlings, weeds compete strongly with the legume seedlings for light, moisture, and nutrients. Severe reduction or loss of stands may result. Several preplant-incorporated treatments are available that offer good annual grass control and some broadleaf weed control at establishment. In addition, postemergence treatments, available for use on new stands, give good broadleaf weed control. Once a stand is established, weeds may continue to reduce yields and impair quality of the forage. Residual herbicides and postemergence herbicides are both available for use in established forage stands. Most are recommended for fall or spring dormant application. Pick the treatment that best suits the specific weed infestation, and carefully follow label directions in terms of timing and rates of application.

Spray volumes for forage areas should be 20-30 gal/A. Lower volumes will also work, but increase risk of spray drift.

The following table illustrates the susceptibility of common alfalfa weeds to recommended herbicides. Herbicide application timings include establishment, seedling stands, fall/spring dormant, and postcutting. Note that four treatments may be used either in seedling stands or as fall or spring treatments in established stands.

**Table 5.6 - Alfalfa - Treatment and Application Timing<sup>1</sup>**

Species	Establishment					Seedling stand and fall/spring dormant					Post			
	Eptam	Balan	2x Gramox-one Inteon <sup>2</sup>	Glyphosate	Buctril	2,4-DB	Kerb	Prowl H <sub>2</sub> O	Pursuit	Raptor	Poast Plus/Poast	Pursuit	Raptor	Select or Select Max
<b>Grasses</b>														
Barnyardgrass	G	G	G	G	N	N	F	G	F-G	F-G	G	F-G	F-G	G
Bermudagrass	F	P	P-F	G	N	N	P	P	N	N	G	N	N	G
Cheat	G	G	G	G	N	N	G	F-G	N	G	P-F	N	G	G
Crabgrass spp.	G	G	G	G	N	N	F	G	F-G	F-G	G	F-G	F-G	G
Fescue, tall (EST)	N	N	G	G	N	N	G	N	N	P	P	N	P	F
Foxtail spp.	G	G	G	G	N	N	F	G	G	G	G	G	G	G
Goosegrass	G	G	G	G	N	N	F	G	F	P	G	F	P	G
Johnsongrass	G	F	G	G	N	N	P	P	G	F-G	G	G	F-G	G
Nutsedge, yellow	G	P	P	F-G	N	N	N	N	P-F	P-F	N	P-F	P-F	N
Orchardgrass (EST)	N	N	G	G	N	N	G	N	N	P	F-G	N	P	G
Panicum, fall	G	G	G	G	N	N	F	G	F	F-G	G	F	F-G	G
Quackgrass	F	P	F	G	N	N	G	N	P-F	P	F-G	P-F	P	F-G
<b>Broadleaf Weeds</b>														
Amaranth, spiny	G	G	G	G	F	G	N	-	F-G	G	N	F-G	G	N
Chickweed, common	F	F	G	G	P	N	G	F	F	G	N	F	G	N
Dandelion (EST)	N	N	P	G	N	P-F	P	N	P-F	F-G	N	P-F	F-G	N
Dock spp. (EST)	N	N	P	F-G	N	P	F	N	P	P	N	P	P	N
Dock spp. seedling	N	N	G	G	N-P	G	F	N	P-F	P-F	N	P-F	P-F	N
Dogbane, hemp	N	N	P	G	N	N	N	N	N	N	N	N	N	N

<sup>1</sup>The susceptibility ratings listed in this table assume correct rates and timings of herbicide application for the normal growth habit of each species. In some instances, ratings are lower than might be obtained if the recommended time of herbicide application and the time of weed presence or optimum susceptibility coincided. The rating scale is as follows: G(good) = 80-100 percent control, F(fair) = 60-80 percent control, P(poor) = 20-60 percent control, and N(none) = < 20 percent control.

<sup>2</sup>2x paraquat refers to susceptibility of weeds when sequential (two) applications of Gramoxone Inteon are used.

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**Table 5.6 - Alfalfa - Treatment and Application Timing<sup>1</sup> (cont.)**

Species	Establishment					Seedling stand and fall/spring dormant					Post				
	Eptam	Balan	2x Gramox-one Inteon <sup>2</sup>	Glyphosate	Buctril	2,4-DB	Kerb	Prowl H <sub>2</sub> O	Pursuit	Raptor	Poast Plus/Poast	Pursuit	Raptor	Select or Select Max	
Henbit	G	P-F	G	G	F-G	N	F	F-G	F	F	N	F	F	N	
Horsenettle	N	N	P	F-G	N	N	N	N	N	N	N	N	N	N	
Horseweed	P	P	P	G	P-F	F-G	P	P	N	N	N	N	N	N	
Knawel (German moss)	P	P-F	F-G	F-G	G	N	P	P-F	N	N	N	N	N	N	
Lambsquarters, common	G	G	G	G	G	G	P	G	P	P	N	P	P	N	
Lettuce, prickly	N	N	F	G	P-F	F	P	N	N	N	N	P	N	N	
Milkweed spp.	N	N	P	F-G	N	N	N	N	N	N	N	N	N	N	
Mustard spp.	P	P	G	G	G	G	P	P-F	G	G	N	G	G	N	
Nightshade, black	G	P-F	G	G	G	G	P	P-F	F-G	F-G	N	F-G	F-G	N	
Pennycress spp.	P	P	G	G	G	G	F	P-F	G	G	N	G	G	N	
Pepperweed spp.	P	P	G	G	G	G	P	P-F	G	G	N	G	G	N	
Pigweed spp.	G	G	G	G	F	G	N	G	F-G	G	N	F-G	G	N	
Plantain spp.	N	N	P	F-G	N	F-G	F	N	N	P	N	N	P	N	
Ragweed, common	P	N	G	G	F	F	N	P	F-G	F	N	F-G	F	N	
Shepherdspurse	P	P	G	G	G	G	F	F	G	G	N	G	G	N	
Smartweed spp.	P	P	F-G	G	G	P	P	P	F-G	F-G	N	F-G	F-G	N	
Speedwell	P	P	G	G	P	P	P	P	P-F	F	N	P-F	F	N	
Thistle, bull	N	N	F	G	P-F	F-G	P	N	N	P-F	N	N	P-F	N	
Thistle, Canada	N	N	P	F-G	P	N	N	N	P	P-F	N	P	P-F	N	
Thistle, plumeless	N	N	F	G	P-F	F-G	P	N	N	P-F	N	N	P-F	N	
Thistle, musk	N	N	F	G	P-F	F-G	P	N	N	P-F	N	N	P-F	N	
Yellow rocket	P	P	F	G	F	G	P-F	P-F	G	G	N	G	G	N	

<sup>1</sup>The susceptibility ratings listed in this table assume correct rates and timings of herbicide application for the normal growth habit of each species. In some instances, ratings are lower than might be obtained if the recommended time of herbicide application and the time of weed presence or optimum susceptibility coincided. The rating scale is as follows: G(good) = 80-100 percent control, F(fair) = 60-80 percent control, P(poor) = 20-60 percent control, and N(none) = < 20 percent control.

<sup>2</sup>2x paraquat refers to susceptibility of weeds when sequential (two) applications of Gramoxone Inteon are used.

**Table 5.7 - Alfalfa - Treatment and Application Timing<sup>1</sup>**

Species	Fall/spring dormant									Postcutting				
	Kamex	MCPA	Velpar	Sencor	Pursuit	Gramoxone Inteon	Sinbar	Raptor	Prowl H <sub>2</sub> O	Velpar	Pursuit	Gramoxone Inteon	Sinbar	Raptor
<b>Grasses</b>														
Barnyardgrass	F	N	P-F	P-F	F-G	N	P-F	F-G	G	P-F	F-G	G	G	F-G
Bermudagrass	P	N	N	P	N	P	P-F	N	P	P-F	N	P-F	P-F	N
Cheat	P-F	N	G	G	N	G	G	G	F-G	F-G	N	G	G	G
Crabgrass spp.	F	N	P-F	P-F	F-G	N	P-F	F-G	G	P-F	F-G	G	G	F-G
Fescue, tall (EST)	F	N	F	P-F	N	F	F	P	N	F	N	F	F	P
Foxtail spp.	F	N	P-F	P-F	G	N	P-F	G	G	P-F	G	G	G	G
Goosegrass	F	N	P-F	P-F	F	N	P-F	P	G	P-F	F	G	G	P
Johnsongrass (seedling)	P-F	N	P	P	G	N	P	F-G	P	P	G	G	G	F-G
Nutsedge, yellow	N	N	P	N	P-F	P	P	P-F	N	P	P-F	P-F	P-F	P-F
Orchardgrass (EST)	F	N	F	P	N	F	F	P	N	F-G	N	F	F	P
Panicum, fall	P-F	N	P-F	P-F	F	N	P-F	F-G	G	P-F	F	G	G	F-G
Quackgrass (EST)	P-F	N	P-F	P	P-F	F	F	P	N	F	P-F	F	F	P
<b>Broadleaf weeds</b>														
Amaranth, spiny	F-G	P	F-G	P	F-G	N	F-G	G	-	F-G	F-G	G	G	G
Chickweed, common	G	N	G	G	F	G	G	G	F	G	F	G	G	G
Dandelion (EST)	P	F-G	F-G	F-G	P-F	P	F	F-G	N	F-G	P-F	P-F	F	F-G
Dock spp. (EST)	P-F	P-F	P-F	F	P	P-F	P-F	P	N	P-F	P	P-F	F	P
Dock spp. (seedling)	F	G	F	F	P-F	G	F	P-F	N	F	P-F	G	G	P-F
Dogbane, hemp	N	N	P	N	N	N	P	N	N	P	N	P	P	N
Henbit	F	N	G	G	F	G	G	F	F-G	F-G	F	G	G	F
Horsenettle	P-F	N	P-F	P-F	N	P	P-F	N	N	P-F	N	P	P-F	N
Horseweed	F	F-G	F	P	N	P	F	N	P	F	N	P	F-G	N
Knawel (German moss)	F-G	N	F	F	N	F-G	F	N	P-F	F	N	F	F	N
Lambsquarters, common	F-G	P	F-G	P	P	N	F-G	P	G	F-G	P	G	G	P
Lettuce, prickly	F	F	F	F	N	F	F	N	N	F-G	N	F	F	N
Milkweed spp.	N	N	P	N	N	N	P	N	N	P	N	P	P	N
Mustard spp.	G	G	G	G	G	F	G	G	P-F	G	G	G	G	G
Nightshade spp.	P-F	P	F	P	F-G	P	F	F-G	P-F	F	F-G	G	G	F-G
Pennycress spp.	G	G	G	G	G	F	G	G	P-F	G	G	G	G	G
Pepperweed spp.	G	G	G	G	G	F	G	G	P-F	G	G	G	G	G
Pigweed spp.	F-G	P	F-G	P	F-G	N	F-G	G	G	F-G	F-G	G	G	G
Plantain spp.	P-F	G	F-G	G	N	P-F	F-G	P	N	F-G	N	G	G	P
Ragweed, common	F-G	P	F-G	P	F-G	N	F-G	F	P	F-G	F-G	G	G	F
Shepherdspurse	G	G	G	G	G	F	G	G	F	G	G	G	G	G

<sup>1</sup>The susceptibility ratings listed in this table assume correct rates and timings of herbicide application for the normal growth habit of each species. In some instances, ratings are lower than might be obtained if the recommended time of herbicide application and the time of weed presence or optimum susceptibility coincided. The rating scale is as follows: G(good) = 80-100 percent control, F(fair) = 60-80 percent control, P(poor) = 20-60 percent control, and N(none) = < 20 percent control.

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**Table 5.7 - Alfalfa - Treatment and Application Timing<sup>1</sup> (cont.)**

Species	Fall/spring dormant									Postcutting				
	Kamex	MCPA	Velpar	Sencor	Pursuit	Gramoxone Inteon	Sinbar	Raptor	Prowl H <sub>2</sub> O	Velpar	Pursuit	Gramoxone Inteon	Sinbar	Raptor
Smartweed spp.	F	P	F-G	P	F-G	N	F-G	F-G	P	F-G	F-G	G	G	F-G
Speedwell	F-G	P	G	F-G	P-F	G	G	F	P	G	P-F	G	G	F
Thistle, bull	P-F	G	P-F	F	N	F	P-F	P-F	N	P-F	N	F	F	P-F
Thistle, Canada	P	P	P	P	P	P	P	P-F	N	P	P-F	P-F	P	P-F
Thistle, plumeless	P-F	G	P-F	F	N	F	P-F	P-F	N	P-F	N	F	F	P-F
Thistle, musk	P-F	G	P-F	F	N	F	P-F	P-F	N	P-F	N	F	F	P-F
Yellow rocket	G	G	G	G	G	P-F	G	G	P-F	G	G	F	F-G	G

<sup>1</sup>The susceptibility ratings listed in this table assume correct rates and timings of herbicide application for the normal growth habit of each species. In some instances, ratings are lower than might be obtained if the recommended time of herbicide application and the time of weed presence or optimum susceptibility coincided. The rating scale is as follows: G(good) = 80-100 percent control, F(fair) = 60-80 percent control, P(poor) = 20-60 percent control, and N(none) = < 20 percent control.

**Table 5.8 - Harvesting, Feeding, and/or Grazing Restrictions for Forage Herbicides**

Herbicide	Type	Length	Comments
Buctril (Bromoxynil)	Graze or Harvest	30 Days 60 Days	After spring application. After fall or winter application.
2,4-DB	Graze or Feed	60 Days 30 Days	Seedling alfalfa. Established alfalfa.
Gramoxone Inteon (Paraquat)	Graze Graze or Harvest	none 60 days 42 days 30 days	Preplant application. Fall/spring dormant seedling. Fall/spring dormant established. Between cutting application.
Karmex (Diuron)	Graze or Harvest	none	Do not replant treated areas in any crop within 2 years of application.
Kerb (Pronamide)	Graze or Harvest	120 Days	Fall or dormant applications.
Poast (Sethoxydim)	Forage (Graze)	7 Days	On the label, forage refers to green, undried alfalfa.
Poast Plus	Hay (harvest)	14 Days	Hay is dried alfalfa.
Prowl H <sub>2</sub> O	Graze or Harvest	50 Days	
Pursuit (Imazethapyr)	Graze or Harvest	30 Days	Do not feed, graze, or harvest for 30 days after application.
Raptor	Cutting or Feeding	20 Days	
Roundup Weather Max (in RR alfalfa)	Graze or Harvest	5 Days	Post application.
glyphosate containing product as labeled	Preplant Preharvest Spot treatment	none 3 days 14 Days	The preharvest interval is 3 days for Roundup Weather Max, but differs for other glyphosate formulations. No more than 1/10 of any acre should be treated at one time. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.
Select or Select Max	Graze, Feed or Harvest	15 Days	If tank mixed with 2,4-DB, the restriction is 60 days.
Sencor (Metribuzin)	Graze or Harvest	28 Days	Dormant applications.
Sinbar (Terbacil)	Graze or Harvest	none	Do not replant treated areas to any crop within 2 years of application.
Velpar (Hexazinone)	Graze or Feed	30 Days	Plant only corn 12 months following application of Velpar.

**Table 5.9 - Alfalfa, Red Clover, and Ladino Clover**

Weed problem	Chemical rate per acre	Product per acre	Remarks
<i>Preplant</i>			
Annual grasses and broadleaf weeds, including barnyardgrass, annual bluegrass, carpetweed, chickweed, crabgrass, Florida pusle, fall panicum, foxtails (giant, green, yellow), goosegrass, johnsongrass from seed, lambsquarters, pigweed, common purslane, sandbur, and annual ryegrass.	Benefin 1.2-1.5 lb	Balan 60DF 2-2.5 lb	Apply to clean, dry soil surface no more than 3 weeks before planting. Incorporate within 4 to 8 hours with a disk set to cut 4 to 6 inches and operate in two different directions at 4 to 6 mph or with power takeoff-driven equipment set to cut 2 to 3 inches deep once over. See label, and adjust rate to soil texture.
Above weeds; also, bermudagrass <i>Brachiaria</i> sp., corn spurry, fall panicum, henbit, nightshade, nutsedge, quackgrass, ryegrass, volunteer small grains, sandbur, and shattercane.	EPTC 3.0-4.0 lb	Eptam 7E 3.5-4.5 pt	Spray on surface of freshly prepared soil. Incorporate into the soil to a depth of 2-3 inches immediately after application. Follow label suggestion for proper incorporation procedures. Plant alfalfa seed immediately after incorporation. Perennial grass rhizomes must be chopped up thoroughly (2- inch sections or less) before treatment. Temporary stunting and sealing of first leaves may occur. Do not use if more than 1.2 lb active ingredient of atrazine was applied within the previous 12 months.
Bluegrass (annual), downy-brome crabgrass, fleabane, foxtails, kochia, common lambsquarters, prickly lettuce, fall panicum, redroot pigweed, smooth pigweed, common and giant ragweed, sandbur, shattercane, Pennsylvania smartweed, Spanish needles, Russian thistle, velvetleaf, volunteer wheat, behiagrass, bermudagrass, field bindweed, Kentucky and annual bluegrass, cattail, dallisgrass, curly dock, hemp dogbane, fescues, guineagrass, johnsongrass, milkweed, wirestem muhly, common mullein, napiergrass, silverleaf nightshade, orchardgrass, paragrass, quackgrass, reed canarygrass, swamp smartweed, Texas blueweed, Canada thistle, torpedograss, vaseygrass.	Glyphosate 0.75-3.3 lb	4.0 lb ai/gal glyphosate or equivalent 0.75-3.3 qt	For control of emerged vegetation before the establishment of alfalfa in conventional systems, or when overseeded into a cover crop. When overseeding alfalfa, glyphosate must be applied before planting a labeled cover crop. Avoid contact of spray with foliage, green stems, or fruit of desirable crops, plants, trees, or other vegetation because severe damage or destruction may result. Repeated treatments may be necessary to control weeds regenerating from underground parts or seed. Repeat treatments must be made before the crop emerges. Do not feed or forage, treated crops within 8 weeks after application. Low volume broadcast applications (3-10 gal/A) are recommended with some formulations for best results.
Orchardgrass and fescue sods, control of annual weeds, alfalfa establishment, and suppression of perennial broadleaf weeds.	Paraquat 0.625-1.0 lb + surfactant	Gramoxone Inteon 2.5-4.0 lb + surfactant as specified by label	For no-till establishment of alfalfa into perennial grass sods. Two applications using 2.25 pt followed in 10-14 days by an additional 1.5 pt will generally be required for complete sod kill. Additional herbicide treatments or alternate methods of establishment may be required if perennial broadleaf weeds are present.

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**Table 5.9 - Alfalfa, Red Clover, and Ladino Clover (cont.)**

Weed problem	Chemical rate per acre	Product per acre	Remarks
<i>Seedling Stands</i>			
Mustard spp., knawel (German moss), common lambsquarters, nightshade spp., and suppression of some other winter annuals.	Bromoxynil 0.25-0.375 lb	Buctril 4EC 0.5-0.75 pt	Apply when weed seedlings are actively growing but do not exceed 4 leaf stage or 2 inches in height. Do not apply to seedling alfalfa with less than 2 trifoliolate leaves. Do not apply if temperatures are expected to exceed 70°F for 3 days after application.
Thistle (bull, curled, and musk), cocklebur, common ragweed, curly dock seedlings, fanweed, filaree, lambsquarters, morningglory, mustards, nightshade, pennycress, prickly lettuce, pigweed, sheperdspurse, and smartweed.	2,4-DB 0.5-1.5 lb	2,4-DB 2.0 lb ai/gal 2.0-6.0 pt or equivalent	Apply when weeds are actively growing, and no more than 3 inches high, or rosettes less than 3 inches across. May be applied either to seedling legumes (when seedling plants have 2-4 trifoliolate leaves) or to established stands (in late fall or early winter for best control). Fields should not be grazed or harvested for forage within 30 days on established stands or 60 days on seedling stands after application. Do not apply if temperature expected above 90°F or to fall below 40°F during or shortly after treatment.
Bluegrass (annual and perennial), cheat, chickweed, orchardgrass, quackgrass, ryegrass, red sorrel, volunteer grains, and wild oats.	Pronamide 0.5-1.5 lb	Kerb 50DF 1.0-3.0 lb	Use on established plantings or on new plantings after legume has reached trifoliolate stage. Apply during fall or early winter and before winter freeze-up. Apply when soil temperature is 50°F or less. Remove or disperse trash or crop residue before treatment. Rainfall necessary to move it into the root zone where it is absorbed. Avoid drift to nontarget areas. Do not graze or harvest for forage within 120 days of treatment.

**Table 5.10 - Established Alfalfa**

Weed Problem	Chemical rate per acre	Product per acre	Remarks
<i>Postemergence</i>			
Bedstraw, chickweed spp., cocklebur, henbit, jimsonweed, knotweed, mallow spp., morningglory spp., mustard spp., nightshade spp., pennycress, pepperweed, pigweed spp., wild radish, ragweed spp., yellow rocket, sheperdspurse, smartweed spp., spurge spp., velvetleaf, barnyardgrass, crabgrass spp., foxtail spp., seedling johnsongrass, shattercane, broadleaf signalgrass, and suppression of rhizome johnsongrass	Imathezapyr 0.047-0.095	Pursuit 2L 3.0-6.0 oz	Apply postemergence to seedling alfalfa, in the fall to dormant alfalfa, in the spring to dormant alfalfa or before spring regrowth reaches 3 inches, or between cuttings. Make applications when weeds are no larger than 1-3 inches or when rosettes are less than 3 inches in diameter. Apply in 10 or more gal of water/A in combination with an approved nonionic surfactant or crop oil concentrate. Do not apply to seedling alfalfa before the crop has two fully expanded trifoliolate leaves. Consult the label and adjust rate for the specific weed infestation. Rates of 4.0 to 6.0 oz/A are generally required for broad spectrum weed control. May be applied to alfalfa/grass mixtures except in the establishment year or in the last year due to rotational restrictions.

**Table 5.10 - Established Alfalfa (cont.)**

Weed Problem	Chemical rate per acre	Product per acre	Remarks
Bromegrass, cereals (barley, oat, wheat), chickweed (common), cocklebur, crabgrass (large), fox-tail (giant, green, yellow), lambs-quarters, jimsonweed, morning-glory, mustard, nightshade, pennycress, pigweed, ryegrass, shattercane, shepardspurse, smartweed, and velvetleaf	Imazamox 0.031-0.047 lb	Raptor 1AS 4.0-6.0 oz	For seedling alfalfa, apply Raptor when the seedling alfalfa is in the second trifoliate stage or larger and when the majority of the weeds are 1-3 inches high. A temporary reduction in growth may occur. Raptor can be applied to established alfalfa in fall, winter, or spring to dormant or semi-dormant alfalfa, or between cuttings. Apply when the weeds are actively growing and before they exceed a height of 3 inches. Wait at least 20 days between application and cutting or using alfalfa forage or hay as feed. Apply a maximum of 6 ounces per season.
Chickweed, corn gromwell, corn spurry, knawel (German moss), pennycress, shepherdspurse, prickly lettuce, dog fennel, wild mustards (including <i>Calepina</i> spp.)	Diuron 1.2-1.6 lb	Karmex 80DF 1.5-2.0 lb	Apply in March or early April when alfalfa is dormant and before it begins growth in the spring. Treat only stands established for one year or more. Do not apply to alfalfa/grass mixtures or to alfalfa with unusually shallow root penetration (such as shallow hard pans) or on sandy soils with less than 1 percent organic matter content. Do not replant treated areas to any crop within 2 years, unless otherwise directed.
Cheat, smoothbrome, wild oats, chickweed, henbit, pepperweed, shepherdspurse, white cockle, bluegrass, dandelion and suppression of dock	Metribuzin 0.375-1.0 lb	Sencor 4F 0.375-1.0 qt, DF 0.5-1.3 lb	Make a single application in the fall after alfalfa becomes dormant or in the spring before new growth starts. Stands planted in the spring that are less than one year old at the time of application may be treated with a maximum of 2/3 lb of Sencor DF/A after alfalfa growth ceases in the fall. Do not graze or harvest within 28 days after application. May be used in alfalfa/grass mixtures.
	Metribuzin 0.25-0.375 lb	Sencor 4F 0.25-0.375 qt, DF 0.33-0.50 lb	Lower rate for chickweed control only.
Bluegrass, chickweed, henbit, downy brome and suppression of perennial grasses including orchardgrass, timothy.	Paraquat 0.50-0.75 lb + surfactant	Gramoxone Inteon 2.0-3.0 pt + surfactant as specified by label	Apply as a broadcast application in 20-60 gal of water/A using ground equipment. Use higher rate for kill or suppression of harder to control weeds and grasses, such as the perennial and smooth brome species. Do not apply if fall regrowth following the last fall cutting is more than 6 inches high. Apply to well-established stands (at least 1 year old) after the last fall cutting when the crop is dormant or before spring growth reaches 2 inches. Alfalfa foliage present at the time of application will be burned, which may reduce the yield of the first cutting. Weeds and grasses should be succulent and growing at the time of application. Do not graze, cut, or harvest within 60 days of application.

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**Table 5.10 - Established Alfalfa (cont.)**

Weed Problem	Chemical rate per acre	Product per acre	Remarks
Annual grasses and broadleaf weeds and suppression of perennial plants	Paraquat 0.25 lb + surfactant	Gramoxone Inteon 1.0 pt + surfactant as specified by label	Alternate method: postharvest application. Apply 20-60 gal of water by ground equipment immediately after alfalfa has been harvested. Do not treat more than 5 days after cutting. Foliage present at application will be burned. Do not cut, or harvest within 30 days of application. Make 1-3 applications per year as required. May be used as a salvage treatment on alfalfa less than 1 year old where weeds threaten the stand. First year alfalfa lands and yields may be reduced if alfalfa is allowed to regrow more than 2 inches. For first year alfalfa, do not apply more than twice during the growing season.
Chickweed, henbit, lambsquarters, horseweed, mustard, pepperweed, prickly lettuce, shepherds-purse, yellow rocket, crabgrass, downy brome, foxtail, ryegrass, and wild barley	Terbacil 0.4-1.2 lb	Sinbar 80W 0.5-1.5 lb	Treat only stands established 1 year or more. Make a single application in the fall after plants become dormant or in the spring before new growth exceeds 2 inches or after cutting following hay removal. For semidormant and nondormant varieties, apply in the fall after last cutting or in the spring before new growth exceeds 2 inches in height. Do not use on seedling alfalfa or on alfalfa grass mixtures or other mixed stands. Do not apply on snow-covered or frozen ground because injury to the crop may result. Do not replant to any crop within 2 years after last application.
Chickweed	Terbacil 0.26-0.4 lb	Sinbar 80W 0.33-0.5 lb	Apply to new seedlings or to established stands. These reduced rates are useful primarily for chickweed control during the dormant season, in less than one-year-old stands.
Barnyardgrass, crabgrass, foxtail spp., goosegrass, seedling johnsongrass, fall panicum, Texas panicum, witchgrass, pigweed spp., henbit, common lambsquarters, carpetweed, purselane, annual spurge, and others	Pendimethalin 0.95-3.8 lb	Prowl H <sub>2</sub> O 3.8 L 1.0-4.0 qt	Apply 1.0-4.0 qts to established alfalfa prior to weed emergence as dormant treatment or before alfalfa reaches 10 inches in height after cutting. Apply 1.0-2.0 qts to seedling alfalfa prior to weed emergence after the alfalfa has reached the second trifoliate stage but before it reaches 6 inches in height. Do not apply less than 50 days prior to alfalfa harvest for forage or hay.
Annual bluegrass, common chickweed, dandelion, groundsel, lambsquarters, crabgrass, fiddle-neck, mustard spp., pennycress, fleabane, foxtails, pigweed spp., shepherdspurse, speedwell, plantain, prickly lettuce, sweet clover	Hexazinone 0.45-1.35 lb	Velpar 90W 0.5-1.5 lb	Apply as a postemergence treatment to established stands of alfalfa in the fall or winter after alfalfa becomes dormant or in the spring before new growth begins or after cutting following hay removal. Use the lower rate on coarse textured soils and the higher rate on fine textured soils. Apply in a minimum of 20 gal/A when weeds are 2 inches high or less for best results. Corn may be planted 12 months after application. Do not graze or feed treated forage to livestock within 30 days following application.

**Table 5.10 - Established Alfalfa (cont.)**

<b>Weed Problem</b>	<b>Chemical rate per acre</b>	<b>Product per acre</b>	<b>Remarks</b>
Many broadleaf weeds, including burdock, Calepina sp., dandelion, goatsbeard, mustards, pennygrass, pepperweed, plantain, shepherdspurse, thistles (curled, musk), and yellowrocket	MCPA 0.5 lb	MCPA 1.0 pt	Apply after frost when alfalfa is defoliated and dormant. Stand losses may result if sprayed when not completely dormant. Temperatures at the time of spraying should be above 40°F. May be used on mixtures with orchardgrass if established 1 year.
Barnyardgrass, bermudagrass, crabgrass, foxtail (giant, green, and yellow), johnsongrass, panicum (fall), quackgrass, ryegrass (annual), shattercane, witchgrass, volunteer small grains, volunteer corn	Sethoxydim 0.19-0.47 lb + crop oil concentrate	Poast 1.0-2.5 pt or Poast Plus 1.5-3.75 pt + crop oil concentrate 2.0 pt or Dash 2.0 pt	Apply to actively growing grasses at the size and rate indicated on the label for the individual grass species. Always add crop oil concentrate to the spray solution. A second application is required for complete control of perennial grass species. Do not apply sethoxydim within 7 days of feeding, grazing, or harvesting forage or within 14 days of feeding or harvesting hay. Can be tank mixed with 2,4-D, but also observe feeding, grazing, and harvesting restrictions.
Barnyardgrass, bermudagrass, crabgrass, foxtail (giant, green, and yellow), goosegrass, johnsongrass (seedling), panicum (fall and Texas), quackgrass, shattercane, and volunteer corn and cereals.	Clethodim 0.094-0.125 lb + crop oil concentrate	Select 2EC 6.0-8.0 oz + crop oil concentrate 1 qt	May be applied to seedling or established alfalfa. Do not apply within 15 days of grazing, feeding, or harvesting (cutting) alfalfa for forage or hay. Can be tank mixed with 2,4-DB, but a 60-day feeding, grazing, and harvesting restriction must be observed. Clethodim may also be available as Select Max 0.97 EC. Consult label for specific rate and adjuvant recommendations.
<i>Spot treatment</i>			
Alfalfa and clover	Glyphosate 0.5-4.0 lb	Roundup Weather Max 0.4-2.9 qt or Touchdown Total 0.35-2.8 qt or other labeled glyphosate formulation	Glyphosate can be used in alfalfa and clover as a spot treatment application. Apply in areas where the movement of domestic livestock can be controlled. No more than one-tenth of any acre should be treated at one time. Remove domestic livestock before application and wait 3 days for Roundup WeatherMax or 14 days for Touchdown after application before grazing livestock or harvesting. May also be applied at a rate of 1.0-2.0 percent, glyphosate: water. Touchdown Total is available as a non-surfactant containing formulation under the trade name Touchdown HiTech.

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**Table 5.10 - Established Alfalfa (cont.)**

Weed Problem	Chemical rate per acre	Product per acre	Remarks
<i>Preharvest</i>			
Alfalfa	Glyphosate up to 1.9 lb depending upon formulation	Roundup Weather Max 1.4 qt or Touchdown Total 1.5 qt or other labeled glyphosate formulation	Glyphosate can be used in declining alfalfa stands or any stand of alfalfa where crop destruction is acceptable. This application will severely injure or destroy the stand of alfalfa. This product will control annual and perennial weeds including quackgrass, when applied prior to harvest of alfalfa. The treated crop and weeds can be harvested and fed to livestock after 36 hours. Allow a minimum of 36 hours between application and harvest. Application can be made at any time of the year. Make only one application to an existing stand of alfalfa per year. Applications greater than 1.4 qt/acre or Roundup Weather Max or 1.5 pt/acre of Touchdown Total will require an 8 week waiting period between application and grazing or harvesting.