

TABLE 4A —Chemical Weed Control in Forage Establishment

Direct-Drilled Forage Legumes (No-Till)

(spring seedings following soybeans, corn or dry edible beans)

In general, the major benefits of weed control in new alfalfa seedings are improved forage quality in the first harvest and insurance against stand loss from intense weed competition. In conventional tillage, weeds present at planting are killed by tillage during final seedbed preparation. With direct seeding (no-till), vegetation control is accomplished before planting with burndown herbicides such as paraquat (*Gramoxone Max*) or glyphosate. The required application rate varies, depending on weed species and size. Refer to the product labels for details. *Gramoxone Max* provides faster kill. Glyphosate is preferred if perennial weeds are present, but fields with serious perennial weed problems should not be direct drilled with a forage legume. Perennial weeds should be controlled in the previous crop or in the fall prior to a spring seeding. Herbicide options in the fall include glyphosate, 2,4-D ester, or a combination of glyphosate plus 2,4-D amine. Do not apply 2,4-D in the spring prior to spring planting.

The need for a burndown herbicide depends on the presence of weeds at planting time. If no weeds are present, a burndown herbicide is not needed. However, a burndown herbicide will improve first-harvest forage quality if weeds are present at planting time, regardless of species or size.

Herbicides applied after crop emergence are not affected by the tillage system used. All of the herbicides listed for postemergence application can be used in all tillage systems including direct drilling.

Alfalfa, Trefoil and Clover Seedings

(clear seedings without small grain companion crops)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Preplant Incorporated Annual broadleaves Annual grasses	EPTC (<i>Eptam</i>)	3	3.5 pt 7L	<ul style="list-style-type: none"> Incorporate into soil immediately after application. Seed may be planted immediately after this operation. Do not use when grass is seeded with legumes.
Postemergence— all tillage systems Annual grasses	sethoxydim (<i>Poast</i>) OR sethoxydim (<i>Poast Plus</i>) + crop oil concentrate	0.19 OR 0.19	1 pt 1.53L OR 1.5 pt 1L + 1 qt	<ul style="list-style-type: none"> Use on spring seedings. Apply postemergence prior to first cutting. Treat small, actively growing grasses (crabgrass up to 4 inches; foxtail, fall panicum, witchgrass, barnyardgrass up to 8 inches). Use 5 to 20 gal of water/A at 40-60 psi. Avoid spray drift onto corn, sorghum, small grains, and turf. Rainfall within 1 hr of application will reduce control. Does not control nutsedge or broadleaved weeds. <i>Poast</i> rate can be reduced to 0.75 pt/A for 1- to 4-inch barnyardgrass, green and giant foxtail, and fall panicum. Addition of liquid nitrogen fertilizer (28% N) at 1 gal/A or ammonium sulfate at 2.5 lb/A will improve large crabgrass control.
Postemergence— all tillage systems Annual broadleaves	2,4-DB amine (<i>Butoxone 200</i> or <i>Butyrac 200</i>)	1	2 qt 2L	<ul style="list-style-type: none"> Apply postemergence when legume seedlings are at or beyond the 1- to 2-trifoliate leaf stage. Can be used if an annual broadleaf problem develops after using Eptam. This treatment is not labeled for use with small grain companion crops. Do not apply to sweet clover or established clovers grown for seed. Do not apply when crop is under stress. Do not apply when the daytime temperature is expected to exceed 90°F within the next 3 days. Do not apply if temperature is expected to fall below 40°F shortly after treatment.

Alfalfa, Trefoil and Clover Seedings (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
<i>Postemergence— all tillage systems</i> Common chickweed Volunteer cereals	Pronamide (Kerb)	0.75	1.5 lb 50W	<ul style="list-style-type: none"> • Apply in the fall following spring or summer seeding. • Apply after soil temperature has dropped below 55°F.

Birdsfoot Trefoil (Only) – Postemergence – All Tillage Systems

(clear seedings without small grain companion crops)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Annual grasses	sethoxydim (Poast) OR sethoxydim (Poast Plus)	0.19 OR 0.19	1 pt 1.53L OR 1.5 pt 1L	<ul style="list-style-type: none"> • Apply postemergence prior to first cutting. • Treat small, actively growing grasses (crabgrass up to 4 inches; foxtail, fall panicum, witchgrass, barnyardgrass up to 8 inches). • Use 5-20 gal of water/A and 40-60 psi. • Avoid spray drift onto corn, sorghum, small grains, and turf. • Rainfall within 1 hr of application will reduce control. • Does not control nutsedge or broadleaved weeds. • Do not apply more than 5 pt/A in one season. • <i>Poast</i> rate can be reduced to 0.75 pt/A for 1-4 inch barnyardgrass, green and giant foxtail, and fall panicum. • Addition of liquid nitrogen fertilizer (28% N) at 1 gal/A or ammonium sulfate at 2.5 lb/A will improve large crabgrass control.
	+ crop oil concentrate		+ 1 qt	
	clethodim (Select, Arrow) + crop oil concentrate	0.094	6 oz 2L + 1%	<ul style="list-style-type: none"> • Use on spring seedings. • Apply postemergence prior to first cutting. • Treat small, actively growing grass. • Do not plant rotational crops until 30 days after application.
Volunteer corn	sethoxydim (Poast) OR sethoxydim (Poast Plus)	0.19 OR 0.19	1 pt 1.53L OR 1.5 pt 1L	<ul style="list-style-type: none"> • Apply postemergence prior to first cutting. • Treat actively growing corn up to a maximum of 20 inches tall. • Use 5-20 gal of water/A and 40-60 psi. • Avoid spray drift onto corn, sorghum, small grains, and turf. • Rainfall within 1 hr of application will reduce control. • Does not control nutsedge or broadleaved weeds. • Do not apply more than 5 pt/A in one season.
	+ crop oil concentrate + 28% liquid nitrogen OR ammonium sulfate		+ 1 qt + 1 gal OR 2.5 lb	
	clethodim (Select, Arrow) + crop oil concentrate + 28% liquid nitrogen OR ammonium sulfate	0.063	4 oz 2L + 1% + 2 qt OR 2.5 lb	<ul style="list-style-type: none"> • Use on spring seedings. • Apply postemergence prior to first cutting. • Treat actively growing volunteer corn up to 12 inches. Increase rate to 6 oz/A for 12- to 24-inch corn. • Do not plant rotational crops until 30 days after application.

Birdsfoot Trefoil (Only) – Postemergence – All Tillage Systems (continued)

(clear seedings without small grain companion crops)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Volunteer cereals (wheat, barley, oats, rye)	sethoxydim (<i>Poast</i>)	0.29	1.5 pt 1.53L	<ul style="list-style-type: none"> • Apply postemergence prior to first cutting. • Treat actively growing grass up to a maximum of 4 inches tall. • Use 5-20 gal of water/A and 40-60 psi. • Avoid spray drift onto corn, sorghum, small grains, and turf. • Rainfall within 1 hr of application will reduce control. • Does not control nutsedge or broadleaved weeds. • Do not apply more than 5 pt/A in one season.
	OR	OR	OR	
	sethoxydim (<i>Poast Plus</i>)	0.29	2.3 pt 1L	
	+	+	+	
	crop oil concentrate		1 qt	
	+	+	+	
	28% liquid nitrogen		1 gal	
	OR	OR	OR	
	ammonium sulfate		2.5 lb	
	OR	OR	OR	
	clethodim (<i>Select, Arrow</i>)	0.125	8 oz 2L	<ul style="list-style-type: none"> • Use on spring or summer seedings. • Apply postemergence prior to first cutting. • Treat actively growing volunteer cereals. • Do not plant rotational crops until 30 days after application.
+	+	+		
crop oil concentrate		1%		
+	+	+		
28% liquid nitrogen		2 qt		
OR	OR	OR		
ammonium sulfate		2.5 lb		

Alfalfa (Only) – Postemergence – All Tillage Systems

(clear seedings without small grain companion crops)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations	
Annual grasses	sethoxydim (<i>Poast</i>)	0.19	1 pt 1.53L	<ul style="list-style-type: none"> • Use on spring seedings. • Apply postemergence prior to first cutting. • Treat small, actively growing grasses (crabgrass up to 4 inches; foxtail, fall panicum, witchgrass, barnyardgrass up to 8 inches). • Use 5-20 gal of water/A and 40-60 psi. • Avoid spray drift onto corn, sorghum, small grains and turf. • Rainfall within 1 hr of application will reduce control. • Does not control nutsedge or broadleaved weeds. • 2,4-DB amine may be tank mixed with <i>Poast</i> or <i>Poast Plus</i> for broadleaf weed control. Temporary leaf burning may occur. Do not apply more than 0.5 lb a.i./A (1 qt/A) of 2,4-DB. Do not add fertilizer to this tank mix. See Remarks and Limitations for 2,4-DB. • Do not apply more than 5 pt/A in one season. • <i>Poast</i> rate can be reduced to 0.75 pt/A for 1-4 inch barnyardgrass, green and giant foxtail, and fall panicum. • Addition of liquid nitrogen fertilizer (28% N) at 1 gal/A or ammonium sulfate at 2.5 lb/A will improve large crabgrass control. 	
	OR	OR	OR		
	sethoxydim (<i>Poast Plus</i>)	0.19	1.5 pt 1L		
	+	+	+		
	crop oil concentrate		1 qt		
	OR	OR	OR		
	OR	OR	OR		
		clethodim (<i>Select, Arrow</i>)	0.094		6 oz 2L
	+	+	+		
	crop oil concentrate		1%		

Alfalfa (Only) – Postemergence – All Tillage Systems (continued)

(clear seedings without small grain companion crops)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations	
Volunteer corn	sethoxydim (<i>Poast</i>)	0.19	1 pt 1.53L	<ul style="list-style-type: none"> • Use on spring seedings. • Apply postemergence prior to first cutting. • Treat actively growing corn up to a maximum of 20 inches tall. • Use 5-20 gal of water/A and 40-60 psi. • Avoid spray drift onto corn, sorghum, small grains and turf. • Rainfall within 1 hr of application will reduce control. • Does not control nutsedge or broadleaved weeds. • Do not apply more than 5 pt/A in one season. 	
	OR	OR	OR		
	sethoxydim (<i>Poast Plus</i>)	0.19	1.5 pt 1L		
	+		+		
	crop oil concentrate		1 qt		
	+		+		
	28% liquid nitrogen		1 gal		
	OR		OR		
	ammonium sulfate		2.5 lb		
	<hr/>				
	clethodim (<i>Select, Arrow</i>)	0.063	4 oz 2L		
	+		+		
	crop oil concentrate		1%		
	+		+		
28% liquid nitrogen		2 qt			
OR		OR			
ammonium sulfate		2.5 lb			
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Volunteer cereals (wheat, barley, oats, rye)	sethoxydim (<i>Poast</i>)	0.29	1.5 pt 1.53L	<ul style="list-style-type: none"> • Use on spring or summer seedings. • Apply postemergence prior to first cutting. • Treat actively growing grass up to a maximum of 4 inches tall. • Use 5-20 gal of water/A and 40-60 psi. • Avoid spray drift onto corn, sorghum, small grains, and turf. • Rainfall within 1 hr of application will reduce control. • Does not control nutsedge or broadleaved weeds. • Do not apply more than 5 pt/A in one season. 	
	OR	OR	OR		
	sethoxydim (<i>Poast Plus</i>)	0.25	2 pt 1L		
	+		+		
	crop oil concentrate		1 qt		
	+		+		
	28% liquid nitrogen		1 gal		
	OR		OR		
	ammonium sulfate		2.5 lb		
	<hr/>				
	clethodim (<i>Select, Arrow</i>)	0.125	8 oz 2L		
	+		+		
	crop oil concentrate		1%		
	+		+		
28% liquid nitrogen		2 qt			
OR		OR			
ammonium sulfate		2.5 lb			
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Annual broadleaves, Foxtail	imazethapyr (<i>Pursuit</i>)	0.063	4 oz 2L OR 1.4 oz 70DG	<ul style="list-style-type: none"> • Apply after alfalfa has 2 fully expanded trifoliolate leaves. • May be applied to spring or summer seedings. • May be applied in spring or fall. • Always add surfactant plus either 28% liquid nitrogen or spray grade ammonium sulfate (AMS). • Treat when weeds are less than 3 inches tall. • Will control several broadleaved weeds in new alfalfa seedings, including common chickweed. See Table 4E for details. • Will suppress volunteer cereals. • <i>Pursuit</i> is labeled for tank mixing with <i>2,4-DB</i>, <i>Poast Plus</i> or <i>Buctril</i>. • Tank mixing <i>Pursuit</i> with <i>Buctril</i> or <i>2,4-DB</i> is not recommended because of increased risk of crop injury. • Tank mixing <i>Pursuit</i> with <i>Poast Plus</i> may result in reduced grass control (grass antagonism). 	
	+		+		
	28% liquid nitrogen		1 qt		
	OR		OR		
	ammonium sulfate		2.5 lb		
	+		+		
	surfactant		0.25%		

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Alfalfa (Only) – Postemergence – All Tillage Systems (continued)

(clear seedings without small grain companion crops)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
<i>(continued)</i>				
Annual broadleaves, Foxtail	imazamox (<i>Raptor</i>)	0.031	4 oz 1L	<ul style="list-style-type: none"> • Apply to new alfalfa seedlings at 2-trifoliolate or larger. • Apply when annual weeds are 1-3 inches tall. • More effective on common lambsquarters than <i>Pursuit</i>. • Giant foxtail and Pennsylvania smartweed required 6 oz/A for effective control in MSU trials. • Henbit, common purslane and smartweed require 6 oz/A for effective control. • <i>Raptor</i> will not control common ragweed, giant ragweed or white cockle. • High densities of common lambsquarters or foxtail require 5 oz/A for effective control. • <i>Raptor</i> may be tank mixed with <i>Poast</i>, <i>Poast Plus</i>, <i>Select</i>, 2,4-DB or bromoxynil; however, tank mixtures with bromoxynil have a high risk of crop injury because of the adjuvants needed with <i>Raptor</i>. • Tank mixing <i>Raptor</i> with <i>Poast</i>, <i>Poast Plus</i> or <i>Select</i> is not recommended because antagonism will occur and grass control will equal that of <i>Raptor</i> alone. • See Table 12 for rotation crop restrictions. • Spray grade ammonium sulfate (AMS) at 17 lb/100 gal may be substituted for 28% liquid nitrogen.
	+		+	
	28% liquid nitrogen		2.5%	
	+		+	
	surfactant		0.25 %	
	OR		OR	
	crop oil concentrate		1%	
OR		OR		
methylated seed oil (MSO)		1%		
Annual broadleaves	bromoxynil (<i>Buctril</i> , <i>Moxy</i>)	0.25	1 pt 2L	<ul style="list-style-type: none"> • Apply postemergence to spring or summer seedings. • Apply after alfalfa has reached at least the 4-trifoliolate leaf stage. • Do not treat when air temperatures exceed 70°F at the time of application or for 3 days following application or unacceptable crop injury may occur. • Do not use any spray additives or increased injury will occur. • Leaf burn following application is likely, but plants recover rapidly in favorable growing conditions. • Warm, humid conditions enhance leaf burn. • Do not treat when plants are under stress. • Rate may be reduced to 1 pt/A for greater crop safety (see label for weed sizes). • With ground application, use a minimum of 20 gal of water/A and 30 psi. • For best results, weeds must be small; see label for details. • Redroot pigweed and wild mustard must be controlled when very small (refer to label for details). • Weak on common chickweed.

Glyphosate-Resistant (Roundup Ready) Alfalfa: Alfalfa Establishment

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Annual grasses Annual broadleaves	glyphosate + ammonium sulfate	0.75	See Table 10 + 17 lb/100 gal	<ul style="list-style-type: none"> • APPLY TO ROUNDUP READY ALFALFA ONLY • Apply at a rate of 0.75 ae lb/A before the 4 trifoliolate growth stage to eliminate seedlings not containing the Roundup Ready gene. • Apply when annual weeds are 2-4 inches tall. • Can be applied postemergence from alfalfa emergence until 5 days prior to cutting. • Can be applied after cutting to newly emerged weeds but before alfalfa regrowth interferes with spray coverage. • Do not cut or graze alfalfa for a minimum of 5 days following application. • Do not apply more than 44 fl oz/A in a single application or 132 fl oz/A in a crop season. • Addition of ammonium sulfate will minimize antagonism from hard water or tank mixtures and is always recommended. • See Table 10 for glyphosate products labeled for postemergence application on Roundup Ready alfalfa. • Use extreme caution to avoid spray drift to sensitive crops. • Excellent crop safety at all stages of growth. • Most effective before first cutting to eliminate weeds and allow establishment of pure alfalfa stands. • Second applications of glyphosate in the establishment year are generally not needed. • Crude protein and relative feed value was significantly increased compared to untreated alfalfa in MSU trials. • No effect on alfalfa stand density has been observed. • Apply 44 fl oz/A for increased henbit control.

TABLE 4B — Chemical Weed Control in Established Forages

Alfalfa (Established Stand – at Least 1-Year-Old)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Yellow rocket and broadleaved winter annuals	metribuzin (<i>Sencor</i>)	0.5	1 pt 4L OR 0.67 lb 75DF	<ul style="list-style-type: none"> • Apply to alfalfa established for one year or more. • Apply to <i>dormant</i> alfalfa in late fall or early spring. • Non-dormant alfalfa may be severely injured. • Application rate varies, depending on soil type (see label). • Sencor rate may be reduced to 0.5 pt/A for common chickweed control.
	terbacil (<i>Sinbar</i>)	1	1.25 80W	<ul style="list-style-type: none"> • Apply to alfalfa established for one year or more. • Apply to <i>dormant</i> alfalfa in late fall or early spring. • See label for crop rotation restrictions. • Early spring applications will control other broadleaf weeds and suppress quackgrass infestations. • Application rate varies, depending on soil type (see label).
	hexazinone (<i>Velpar</i>)	0.5	0.55 lb 90SP OR 1 qt 2L OR 0.67 lb 75DF	<ul style="list-style-type: none"> • Apply to alfalfa established for one year or more. • Alfalfa plants should be healthy, vigorous, and not under stress by weather, insects, diseases or extreme weed competition. The crop root system should be well established. • Apply in late fall or early spring before alfalfa growth exceeds 2 inches. Applications to <i>dormant</i> alfalfa provide the greatest crop safety. • Application can be made between cuttings before regrowth exceeds 2 inches tall, but alfalfa injury may result if plants are under stress. Do not make more than one application in one growing season. • Do not apply to seedling alfalfa or alfalfa-forage grass mixtures. • Do not apply to snow-covered or frozen ground. • Use at least 20 gal water/A for ground application. • Rotational restriction: Corn may be planted 12 mo. following the last application, provided the soil is mold-board plowed prior to planting. Do not plant any other crop for 2 years after application. • Application rate varies, depending on soil type (see label).
Dandelions	metribuzin (<i>Sencor</i>)	1	1 qt 4L OR 1.33 lb 75DF	<ul style="list-style-type: none"> • Apply to alfalfa established for one year or more. • Apply in spring before alfalfa breaks dormancy. • Non-dormant alfalfa may be severely injured. • Perennial grasses may also be suppressed. • Early spring applications will control other broadleaf weeds and suppress quackgrass infestations. • Application rate varies, depending on soil type (see label).

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Alfalfa (Established Stand – At Least 1-Year-Old) (continued)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
<i>(continued)</i>				
Dandelions	hexazinone (<i>Velpar</i>)	1	1.1 lb 90SP OR 2 qt 2L OR 1.33 lb 75DF	<ul style="list-style-type: none"> • Apply to alfalfa established for one year or more. • Alfalfa plants should be healthy, vigorous, and not under stress by weather, insects, diseases or extreme weed competition. The crop root system should be well established. • Apply in spring before alfalfa growth exceeds 2 inches. Spring applications to <i>dormant</i> alfalfa provide the greatest crop safety. • Application can be made between cuttings before regrowth exceeds 2 inches tall, but alfalfa injury may result if plants are under stress. Do not make more than one application in one growing season. • Do not apply to seedling alfalfa or alfalfa-forage grass mixtures. • Do not apply to snow-covered or frozen ground. • Use at least 20 gal of water/A for ground application. • Rotational restriction: Corn may be planted 12 mo. following the last application, provided the soil is mold-board plowed prior to planting. Do not plant any other crop for 2 years after application. • Will also provide partial control of quackgrass. • Application rate varies, depending on soil type (see label).
Hoary alyssum, Annual broadleaves	2,4-DB amine (<i>Butoxone 200</i> or <i>Butyrac 200</i>)	1	2 qt	<ul style="list-style-type: none"> • Apply in early April. • Spray when hoary alyssum seedlings are in the 2- to 4-leaf stage. • Do not apply when crop is under stress. • Do not apply when the daytime temperature is expected to exceed 90°F within the next 3 days. Do not apply if the temperature is expected to fall below 40°F shortly after treatment.
Quackgrass	pronamide (<i>Kerb</i>)	1.5	3 lb 50W	<ul style="list-style-type: none"> • Apply in late fall when soil temperatures are below 55°F. • For light to moderate quackgrass infestations, rate can be reduced to 1 lb a.i./A (2 lb/A of formulated product).

Glyphosate-Resistant (Roundup Ready) Alfalfa: Established Alfalfa

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Annual grasses Annual broadleaves	glyphosate + ammonium sulfate	0.75	See Table 10 + 17 lb/100 gal	<ul style="list-style-type: none"> • APPLY TO ROUNDUP READY ALFALFA ONLY • Apply when weeds are actively growing. • Can be applied from spring regrowth until 5 days prior to cutting. • Can be applied after cutting to newly emerged weeds but before alfalfa regrowth interferes with spray coverage. • Do not cut or graze alfalfa for a minimum of 5 days following application. • Do not apply more than 44 fl oz/A in a single application or 132 fl oz/A in a crop season. • Addition of ammonium sulfate will minimize antagonism from hard water or tank mixtures and is always recommended. • See Table 10 for glyphosate products labeled for post-mergence application on Roundup Ready alfalfa. • Use extreme caution to avoid spray drift to sensitive crops.

Birdsfoot Trefoil (Established Stand)

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Quackgrass	pronamide (Kerb)	1.5	3 lb 50W	<ul style="list-style-type: none"> • Apply in late fall when soil temperatures are below 55°F. • For light to moderate quackgrass infestations, rate can be reduced to 1 lb a.i./A (2 lb/A of formulated product).

Grass Pasture

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Perennial broadleaves	2,4-D ester	1	1 qt 4L	<ul style="list-style-type: none"> • Apply in fall or spring to actively growing weeds. • Legumes will be injured or killed.
	dicamba (Banvel/Clarity)	1	1 qt 4L	<ul style="list-style-type: none"> • Legumes will be injured or killed. • Apply in fall or spring to actively growing weeds. • Treat when biennials are in the rosette stage.
	2,4-D ester + dicamba (Banvel/Clarity)	0.75 + 0.25	1.5 pt 4L + 0.5 pt 4L	<ul style="list-style-type: none"> • Legumes will be injured or killed. • Apply in fall or spring to actively growing weeds.
	clopyralid (Stinger)	0.188	0.5 pt 3L	<ul style="list-style-type: none"> • Apply only to established forage grasses. • Legumes will be injured or killed. • See Table 12 for crop rotation restrictions. • A premix of clopyralid + 2,4-D amine (<i>Curtail</i>) is available.

Preharvest Application — Alfalfa

Weed Controlled	Herbicide	Rate lb/A a.i.	Formulation/A	Remarks and Limitations
Quackgrass	glyphosate (3 lb a.e./gal) (3.7 lb a.e./gal) (4.5 lb a.e./gal) + ammonium sulfate	0.75	32 fl oz 26 fl oz 22 fl oz + 17 lb/100 gal	<ul style="list-style-type: none"> • Refer to Table 10A for glyphosate products labeled for preharvest application in alfalfa. • Refer to Table 10A to determine if a surfactant is required. • May be applied prior to the last harvest before reestablishment of the site. • Fits fall application best. • Alfalfa will be injured but not killed. • Deep tillage following harvest will be required for complete kill of alfalfa and quackgrass. • Does not fit no-tillage systems. • Treat actively growing quackgrass at least 8 inches tall. • Addition of ammonium sulfate (AMS) at 17 lb/100 gal of water often improves control. • Allow a minimum of 36 hours between application and harvest. • A time interval of 3 days between application and harvest is recommended to allow maximum quackgrass control. • Treated crop and weeds can be fed to livestock. • Do not use on alfalfa grown for seed. • See label for further details.

TABLE 4C — Harvest Restrictions for Forage Legume Herbicides (as indicated on the product labels)

Herbicide	Restrictions
<i>Buctril, Moxy</i>	Do not cut for feed or graze spring-treated alfalfa within 30 days following treatment. Do not cut for feed or graze fall or winter treated alfalfa until spring, at least 60 days after treatment.
<i>Eptam</i>	None for preplant application.
Glyphosate	Refer to Table 10 for harvest restrictions.
<i>Kerb</i>	Do not graze or harvest for forage or dehydration within 120 days of application.
MCPA	Do not allow livestock to forage or graze treated areas within 7 days of slaughter.
<i>Poast, Poast Plus</i>	Do not apply within 7 days of feeding, grazing or harvesting for (undried) forage, or within 14 days of feeding or harvesting for (dry) hay.
<i>Pursuit</i>	Do not feed, graze or harvest alfalfa for 30 days following application.
<i>Raptor</i>	There should be an interval of at least 20 days between application and cutting or feeding alfalfa forage or hay.
<i>Select</i>	Do not apply within 15 days of grazing, feeding or harvesting (cutting) alfalfa for hay or forage.
<i>Sencor</i>	Do not graze or harvest within 28 days after application.
<i>Sinbar</i>	None.
<i>Velpar</i>	Do not graze or feed forage or hay to livestock within 30 days after application.
2,4-DB	Do not graze established alfalfa or feed straw or hay from treated crops to livestock within 30 days after application. Do not graze or feed seedling alfalfa, clover or birdsfoot trefoil within 60 days after application.

TABLE 4D — Harvest Restrictions for Forage Grass Herbicides (as indicated on the product labels)

Herbicide	Restrictions
<i>Banvel/Clarity</i>	Animals cannot be removed from treated area for slaughter prior to 30 days after last application. There is no waiting period between treatment and grazing for non-lactating animals. Timing restriction for lactating dairy animals following treatment: up to 1 pt/A—7 days before grazing, 37 days before hay harvest; up to 1 qt/A—21 days before grazing, 51 days before hay harvest. See label for details.
<i>Curtail</i>	Do not cut treated grass for hay within 30 days after application. Remove meat animals from freshly treated areas 7 days before slaughter. Withdrawal is not needed if 2 weeks have elapsed since application. Do not graze dairy animals in treated areas for 14 days after application. Do not use hay or straw from treated areas or manure from animals grazed in treated areas for composting or mulching on susceptible broadleaf crops. Do not transfer livestock from treated grazing areas onto sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture. Otherwise, urine may contain enough clopyralid to cause injury to sensitive broadleaf plants.
<i>Stinger</i>	Do not use hay or straw from treated areas or manure from animals grazed in treated areas for composting or mulching on susceptible broadleaf crops. Do not transfer livestock from treated grazing areas onto sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture. Otherwise, urine may contain enough clopyralid to cause injury to sensitive broadleaf plants.
2,4-D	Do not graze animals on treated areas within 7 days after treatment. Do not permit dairy animals or meat animals being finished for slaughter to forage treated fields within 3 days of slaughter. Do not cut grass for hay within 30 days after application.

TABLE 4E —Weed Response to Herbicides in Forage Legumes*

SITE OF ACTION	CROP TOLERANCE**	ANNUAL BROADLEAVES										ANNUAL GRASSES						PERENNIALS									
		COCKLEBUR	JIMSONWEED	LAMBSQUARTERS	NIGHTSHADE (E. BLACK)	PIGWEEED (REDROOT)	RAGWEEED (COMMON)	SMARTWEEED	VELVETLEAF	WILD MUSTARD	HOARY ALYSSUM	YELLOW ROCKET	CHICKWEEED (COMMON)	HENBIT/DEADNETTLE	BARNYARDGRASS	CRABGRASS	GIANT FORTAIL	GREEN FORTAIL	YELLOW FORTAIL	FALL PANICUM	WITCHGRASS	BINDWEEED (FIELD)	CANADA THISTLE	QUACKGRASS	YELLOW NUTSEEDGE	DANDELION	CURLED DOCK
Seedling Legumes																											
BUCTRIL/MOXY/OTHERS	O 3	G	G	E	G	F	G	G	G	F	F	F	P	G	N	N	N	N	N	N	N	P	P	N	N	P	P
EPTAM	O 2	P	P	G	P	F	F	F	F	F	F	F	E	E	E	E	E	E	E	E	N	N	F	P	N	P	
KERB	O 1	P	P	P	P	P	P	P	P	P	P	G	G	F	F	P	F	F	P	P	N	N	G	N	N	P	
MCPA***	O 4	F	F	G	G	G	G	F	G	G	F	P	-	N	N	N	N	N	N	N	P	P	N	N	P	P	
POAST or POAST PLUS	A 1	N	N	N	N	N	N	N	N	N	N	N	N	E	G	E	E	E	E	E	N	N	F	N	N	N	
PURSUIT	B 2	E	F	P	E	E	F	G	G	G	-	G	G	F	F	F	G	G	G	F	F	P	P	N	F	P	P
RAPTOR	B 2	G	G	G	E	E	F	G	G	E	-	G	G	P	F	F	E	G	G	F	F	P	F	P	P	-	-
SELECT/ARROW	A 1	N	N	N	N	N	N	N	N	N	N	N	N	E	G	E	E	E	E	E	N	N	G	N	N	N	
2,4-DB	O 2	P	P	G	F	G	F	P	F	F	F	F	P	F	N	N	N	N	N	N	N	P	P	N	N	N	F
Established Alfalfa																											
SENCOR	C 3	E	G	E	N	E	E	E	E	E	E	E	E	G	G	G	E	E	G	G	N	N	P	P	G	P	
SINBAR	C 3	G	G	G	G	G	G	G	G	G	E	E	E	G	G	G	G	G	G	G	P	F	F	P	F	P	
VELPAR	C 3	G	G	E	F	E	E	E	G	E	E	E	E	G	G	E	E	E	E	E	F	F	F	F	E	P	

Herbicide Site of Action: A = ACCase Inhibitor; B = ALS Inhibitor; C = Photosynthesis Inhibitor; O = Other

Herbicide Effectiveness: P = Poor; F = Fair; G = Good; E = Excellent; N = None; - = Not enough information to rank

*The above ratings are a relative comparison of herbicide effectiveness. Weather conditions greatly influence the herbicide's effectiveness, and weed control may be better under favorable conditions or poorer under unfavorable conditions.

**Crop Tolerance: 1=Minimal risk of crop injury; 2=Crop injury can occur under certain conditions (soil applied—cold, wet; foliar applied—hot, humid); 3=Severe crop injury can occur. Follow precautions under Remarks and Limitations and on the label; 4=Risk of severe crop injury is high. Recommended only in rescue situations.

***See Table 3A for rate, remarks and limitations.

TABLE 4F —Weed Response to Herbicides in Established Forage Grasses*

SITE OF ACTION	CROP TOLERANCE**	ANNUAL BROADLEAVES										ANNUAL GRASSES						PERENNIALS							
		COCKLEBUR	JIMSONWEED	LAMBSQUARTERS	NIGHTSHADE (E. BLACK)	PIGWEEED (REDROOT)	RAGWEEED (COMMON)	SMARTWEEED	VELVETLEAF	WILD MUSTARD	HOARY ALYSSUM	YELLOW ROCKET	CHICKWEEED (COMMON)	BARNYARDGRASS	CRABGRASS	GIANT FORTAIL	GREEN FORTAIL	YELLOW FORTAIL	FALL PANICUM	WITCHGRASS	BINDWEEED (FIELD)	CANADA THISTLE	QUACKGRASS	YELLOW NUTSEEDGE	DANDELION
2,4-D ESTER	O 2	E	G	E	E	E	F	G	G	G	G	P	N	N	N	N	N	N	N	F	F	N	N	G	P
BANVEL/CLARITY	O 2	E	E	E	E	E	E	G	E	G	E	E	N	N	N	N	N	N	N	G	G	N	N	G	F
STINGER	O 2	E	G	P	F	P	E	F	P	P	P	P	N	N	N	N	N	N	N	P	G	N	N	G	P

Herbicide Site of Action: A = ACCase Inhibitor; B = ALS Inhibitor; C = Photosynthesis Inhibitor; O = Other

Herbicide Effectiveness: P = Poor; F = Fair; G = Good; E = Excellent; N = None; - = Not enough information to rank

*The above ratings are a relative comparison of herbicide effectiveness. Weather conditions greatly influence the herbicide's effectiveness, and weed control may be better under favorable conditions or poorer under unfavorable conditions.

**Crop Tolerance: 1=Minimal risk of crop injury; 2=Crop injury can occur under certain conditions (soil applied—cold, wet; foliar applied—hot, humid); 3=Severe crop injury can occur. Follow precautions under Remarks and Limitations and on the label; 4=Risk of severe crop injury is high. Recommended only in rescue situations.