

Weed Control Strategies for Alfalfa Production

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The importance of weed control in alfalfa production should not be overlooked especially when you consider the high investment associated with this crop.

Weeds reduce alfalfa yield by competing for water, sunlight and nutrients. A heavy infestation of common chickweed can cause a significant reduction in the yield obtained from the first cutting of alfalfa.

Weeds also affect the quality of alfalfa. The coarse stems of curly dock and horseweed (also known as mare's tail) makes these plants undesirable to livestock. Also some weeds are unpalatable to livestock due to spines, thorns, or certain chemical components, or they are potentially toxic to livestock.

Weed control programs in alfalfa focus on both cultural and chemical practices. The specific type of practices that an alfalfa grower uses will depend on whether the alfalfa is a new seeding or an established stand.

NEW SEEDINGS

Weed control is more critical during the first year than any other period of alfalfa production. Alfalfa seedlings grow slow and are easily overcome by rapidly growing weeds. Research has shown that some broadleaf weed seedlings are capable of growing five times more rapidly than certain legume seedlings. The fact that alfalfa stands gradually decline with age makes it important to start with a good stand. A uniform dense stand is likely to survive longer and have fewer weed problems compared to a thin stand.

Weed-Free Seed: The use of weed-free seed is the first step to prevent the introduction of weeds. Growers should check the seed tag to determine the purity of the seed. Noxious weeds such as dodder or johnsongrass should be listed on the label if seed analysis has determined that they are a contaminant in the seed.

in addition to lime or fertilizer for fields having a poor stand with a nutrient deficiency.

Time of Seeding: Weed control is one of many factors that will determine whether fields are seeded in the spring or fall. Seeding in late summer or early fall will enable the crop to become established and compete with such weeds as large crabgrass, yellow foxtail, and lambsquarters. A spring seeding is vulnerable to these weeds. On the other hand, seeding in late summer or early fall may lead to problems with such weeds as common chickweed, henbit, and yellow rocket.

Liming and fertilization: Adjusting the soil pH and nutrient levels according to soil test recommendations is important during the establishment phase and throughout the life of the alfalfa stand. The objective is to achieve a competitive alfalfa stand by developing and maintaining the proper soil pH and nutrient balance.

Lime or fertilizer are usually not effective in eliminating established weeds, especially where the alfalfa stand is poor. Also, such weeds as chickweed, curly dock, and crabgrass respond favorably to fertilization. Therefore, other weed control methods are often needed

Clipping new seedings: Clipping can be an effective option for controlling such weeds as common cocklebur or jimsonweed in new stands of alfalfa. This method controls weeds by removing the leaves and lateral buds that develop new growth. Annual broadleaf weeds have buds that develop above the soil surface and are more easily controlled with clipping compared to grasses which have crown buds near the soil surface.

Clipping as low as possible is necessary for clipping to be effective. The fact that alfalfa plants have crown buds enable them to tolerate low clipping.

Smothering alfalfa plants with heavy residue can be a major problem when clipping new alfalfa seedings. Therefore, removal of clipped vegetation may be necessary particularly when weed infestations are heavy.

Herbicides for new seedings: Herbicides used for new seedings are designed to eliminate or reduce competition from rapidly growing weeds during the establishment phase. In some instances herbicides that aid in the establishment of alfalfa have also contributed to higher yields in subsequent years and greater longevity of stands.

Herbicides recommended for new seedings of pure alfalfa are summarized in table 1. The forage grasses tend to be susceptible to herbicide injury during seedling development; thus, there are no herbicides registered for use with new seedings of alfalfa-grass mixtures.

MAINTAINING ESTABLISHED STANDS

Established alfalfa plants are capable of growing fairly rapidly and competing against many weed seedlings during the growing season. However, weeds gradually invade fields where alfalfa stands decline with age. Timely mowing and use of herbicides may aid in weed control and prolong the life of the alfalfa stands.

Clipping established stands: The routine mowing of alfalfa for hay is sometimes effective in controlling perennial weeds by reducing food reserves and plant vigor. However, in pastures, livestock selectively graze alfalfa and may leave such weeds as chicory or musk thistle. Mowing soon after livestock have been removed from the pasture can help control weeds and prevent seed production and further spread of infestations.

Mowing the field borders and adjacent fields can prevent production and spread of weed seed from these areas into alfalfa fields. This is a particularly important for such weeds as musk thistle which is capable of producing a large number of seed that are easily spread to new areas.

Herbicides for established stands: Many of the herbicides used for new seedings can also be used for weed control in established stands. Additional herbicide options are also available for established stands. The deep root system of established stands enable alfalfa plants to tolerate certain herbicides that are unsuitable for new seedings.

Herbicides recommended for established alfalfa are summarized in table 2. When selecting herbicides for established alfalfa, consider such factors as feeding, grazing, and rotational crop restrictions, and whether the herbicide is applied as a dormant, nondormant, or between harvest treatment.

TABLE 1

HERBICIDES RECOMMENDED FOR NEW SEEDINGS PURE STANDS*
BEFORE SEEDING
ROUNDUP Controls all existing vegetation. Allow 7 or more days before seeding. Consult label for rates and stages of weed growth. Do not feed or forage for 8 weeks after application.
GRAMOXONE EXTRA Controls annual grasses and broadleaf weeds and certain perennials. Apply postemergence to vegetation either before or after seeding but before crop emerges.
PREPLANT INCORPORATED
BALAN Controls crabgrass, fall panicum, foxtails, and pigweeds. Do not sow grass or small grain nurse crop.
EPTAM Controls crabgrass, fall panicum, foxtails, and seedling johnsongrass. Do not sow grass or small grain nurse crop.
POSTEMERGENCE
KERB Controls chickweed, mustard, orchardgrass, quackgrass, red sorrel, and shepherdspurse. Apply after alfalfa has reached the trifoliolate leaf stage. Optimum results occur when applied in fall or early winter when temperature is 55° F or less and before weeds emerge. Do not graze, cut or harvest within 120 days after treatment.
BUTYRAC or BUTOXONE Controls common ragweed, lambsquarters, mustard, pennycress, pigweeds, and yellow rocket. Apply after the crop has reached the trifoliolate leaf stage. Do not graze or use for feed within 60 days after treatment.
BUCTRIL Controls cocklebur, common ragweed, jimsonweed, lambsquarters, smartweed, and wild mustard. Apply in the spring when the crop is in the 2 - 4 trifoliolate leaf stage and before weeds exceed the 4 leaf stage or rosettes exceed 1.5 inches across. Do not graze or use for feed within 30 days after treatment.
POAST Controls crabgrass, fall panicum, foxtails, johnsongrass, shattercane and certain other grasses. An oil concentrate must be included as an additive. Some weeds such as rhizome johnsongrass may require an additional application when regrowth occurs or new plants emerge. Do not harvest for hay within 20 days after application or use treated fields for grazing or harvest for green-chop forage within 7 days after application.
BETWEEN HARVEST
GRAMOXONE EXTRA Controls annual grasses and broadleaf weeds. Apply immediately after alfalfa has been removed for silage or hay. Do not treat more than 5 days after cutting. Alfalfa stands may be reduced if alfalfa is allowed to regrow more than 2 inches. Do not graze, cut, or harvest within 30 days after application. Do not make more than 2 applications during the growing season.

* Always read and follow label directions.

TABLE 2

HERBICIDES RECOMMENDED FOR ESTABLISHED STANDS*	DORMANT	NON-DORMANT	BETWEEN HARVEST
PURE ALFALFA STAND			
<p>BUTYRAC or BUTOXONE Controls common ragweed, lambsquarters, mustard, pennycress, pigweeds, and yellow rocket. Apply in the fall or spring when weeds are small. Do not graze or use for hay within 30 days after treatment.</p>		X	
<p>GRAMOXONE EXTRA Apply either as a dormant or between harvest treatment for control of annual grasses and broadleaf weed.</p> <p><i>Dormant treatment:</i> Apply after last fall cutting when crop is dormant but before spring regrowth reaches 1 inch. Do not apply if fall regrowth is more than 6 inches. Do not apply more than 1 treatment/season. Do not graze, cut or harvest within 60 days after application.</p> <p><i>Between harvest treatment:</i> Apply immediately after alfalfa has been removed for silage or hay. Do not treat more than 5 days after cutting. Do not graze, cut, or harvest within 30 days after application. Do not make more than 3 applications during the growing season.</p>	X		X
<p>KERB Controls chickweed, mustard, orchardgrass, quackgrass, red sorrel, and shepherdspurse. Optimum results occur when applied in fall or early winter when temperature is 55° F or less and before weeds emerge. Do not graze, cut or harvest within 120 days after treatment.</p>	X	X	
<p>POAST Controls crabgrass, fall panicum, foxtails, johnsongrass, shattercane and certain other grasses. An oil concentrate must be included as an additive. Some weeds such as rhizome johnsongrass may require an additional application when regrowth occurs or new plants emerge. Do not harvest for hay within 20 days after application or use treated fields for grazing or harvest for green-chop forage within 7 days after application.</p>		X	
<p>SENCOR or LEXONE Apply as a dormant or post-dormant treatment (Sencor) for control of barnyardgrass, chickweed, dandelion, henbit, pepperweed, shepherdspurse, and yellow rocket.</p> <p><i>Dormant treatment:</i> Apply when alfalfa growth ceases in late fall and before growth begins in spring. Do not graze or harvest within 28 days after treatment.</p> <p><i>Post dormant treatment:</i> Sencor may be applied after dormancy has broken but prior to three inches of new growth only when impregnated to dry fertilizer and alfalfa foliage is dry. When using this method, do not harvest or graze for 60 days after treatment.</p>	X		
<p>SINBAR Controls chickweed crabgrass, foxtails, henbit, lambsquarters, mustard, pepperweed, prickly lettuce, shepherdspurse, and yellow rocket. Apply in the fall after plants become dormant or in spring before new growth begins. Do not replant treated areas to other crops within 2 years after treatment. Do not apply to frozen or snow-covered ground.</p>	X		
<p>VELPAR Apply either as a dormant, post-dormant, or between harvest treatment. Velpar will control such weeds as chickweed, crabgrass, foxtails, shepherdspurse, yellow rocket and downy brome depending on when treatment is applied. Do not graze or feed treated forage to livestock within 30 days after treatment. Corn may be planted within 12 months after treatment providing the soil is deep disked or plowed. Do not plant other crops within 2 years after application.</p> <p><i>Dormant treatment:</i> Apply in fall or winter after plants become dormant.</p> <p><i>Post dormant treatment:</i> Apply in the spring before new growth exceeds 2 inches high.</p> <p><i>Between harvest treatment:</i> Apply after cutting following hay removal and before regrowth exceeds 2 inches.</p>	X		
ALFALFA-GRASS MIXTURES			
<p>SENCOR or LEXONE Controls chickweed, henbit, pepperweed, shepherdspurse, and yellow rocket. Apply to alfalfa when growth ceases in late fall and before growth begins in spring. Partial reduction of forage grasses may occur with this treatment. Do not graze or harvest within 28 days after treatment.</p>	X		

* Always read and follow label directions.