

Weed Management in Alfalfa

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Weed competition is a serious problem when establishing alfalfa and in established stands of alfalfa. The presence of annual and perennial weeds in the field lowers the quality of the forage and the tonnage of alfalfa produced. Weed competition during early season growth may weaken alfalfa to the extent that subsequent yields are lowered, especially during seasons of low rainfall. In addition, specific weed infestations makes mowing difficult and weeds that cure slowly interfere with proper curing of the forage. The use of herbicides can assist the grower in production of alfalfa with increased quality and quantity.

Three types of herbicides are used for weed control in alfalfa: those applied to the seedbed prior to seeding (preplant) or before emergence (preemergence) and those applied to the foliage of alfalfa and weeds after emergence (postemergence). Tables 1 and 2 list herbicides available for weed control in new seedings and established stands of alfalfa.

The development of non-selective herbicides glyphosate and paraquat allows for the production of alfalfa by no-tillage means on marginal sites. The number of trips over the field are reduced and the potential for erosion is greatly reduced using these materials. Tables 3 and 4 list methods for no-tillage vegetation management and weed control after no tillage forage seeding. Due to the lack of residual activity of these materials control of annual grasses has been a problem.

The current emphasis on weed control research in alfalfa at the Massachusetts Agricultural Experiment Station has been the control of annual and perennial grass weeds with recently developed postemergence grass herbicides. POAST (sethoxydim), FUSILADE (fluzifop-p-butyl), VERDICT (haloxyfop-methyl) and ASSURE (DPX-Y6202) which are currently being considered for registration provide excellent postemergence control of annual and perennial grasses in alfalfa resulting in increased yields and improved forage quality.

Table 1. Herbicides for New Seedlings of Alfalfa.

| Commercial Product Rate per Acre | Comments and Cautions |
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| <u>Pure Legume</u> | |
| EPTAM 7E (EPTC) 3 1/2-4 1/2 pts. | Should be applied on a dry surface followed by incorporation within the top 3-4 inches within 20-30 minutes of application. Excellent control of nutsedge, annual grasses and many broadleaf weeds. Wild mustard, wild radish and ragweed are not controlled satisfactorily. Follow-up postemergence spray with 2, 4-DB may be needed. |
| <u>Legumes with or without Forage Grasses</u> | |
| BUTYRAC 200 (2, 4-DB) 1-3 qts. or BUTOXONE (2, 4-DB) 1-3 qts. or BUTYRAC ESTER (2, 4-DB) 1-2 qts (annual broadleaf weeds) | Apply when legumes are in 2-4 true leaf stage and weeds are less than 3 inches. Use lower rates on weeds less than 1 inch. Use BUTYRAC ESTER on larger weeds. Will not control grass weeds, white cockle, wild radish, wintercress or chickweed. Do not feed within 60 days of spraying. |
| PREMERGE (dinoseb) 2 qts. in 30-40 gals. water (restricted use herbicides in some states) | Apply when legumes at 2-3 true leaf stage and leaves of legumes are dry. Lower rates should be used at higher temperatures. Do not graze livestock on treated areas before first cutting. Can be used on an oat companion crop. Apply when oats are 3-6 inches tall. |

Table 2. Herbicides for Weed Control in Established Alfalfa.

| Commercial Product Rate per Acre | Comments and Cautions |
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| PRINCEP 80W (simazine) 1 1/4 lb. or PRINCEP CALIBER 90 1.1 lb. (broadleaf and grass weeds) | Use on established alfalfa or in seeding year if seeded before June 1. Also use on alfalfa-orchardgrass mixtures established at least 1 year. Apply after last cutting but before permanently frozen soil conditions. Allow 30 days after application before grazing and 60 days before cutting hay. |
| SENCOR 50W/LEXONE 50W (metribuzin) 1-1 1/4 lb. or SENCOR DF/LEXONE DF 2/3-3/4 lb. or SENCOR 4/LEXONE 1-1 1/4 pts. (annual grasses and numerous broadleaf weeds) | Do not apply on alfalfa during first growing season. On established stands make single application in fall after plants become dormant or in the spring before new growth starts. Most effect preemergence to weeds. On established alfalfa-orchardgrass mixture use only up to 1 lb. SENCOR 50WP or equivalent. Do not graze or harvest within 28 days after application. |
| SINBAR 80W (terbacil) 1-1 1/2 lbs. (many annual and some perennial weeds) | Use only on pure stands of alfalfa established at least one year. Apply in fall after plants become dormant or in spring before new growth starts. |
| VELPAR L (hexazinone) 1-3 qts. (annual and perennial weeds) | Use only on pure stands of alfalfa established at least one year. Apply in fall or spring on dormant stands or in between cuttings before new growth exceeds 2 inches. Do not graze within 30 days. Effective preemergence to early postemergence on listed species. |
| PARAQUAT ⁺ PLUS or GRAMOXONE (paraquat) (annual weeds between cuttings) | Apply on alfalfa established at least one year. Apply 2-3 pts. after alfalfa dormant but before new spring growth is more than 1 in. or apply 1 pt. between cutting within 5 days of mowing. Do not graze within 30 days of application. |

Table 3. Sod Control Prior to No-Till Alfalfa Seeding.

| Time of Seeding | Existing Vegetation | Herbicide Management |
|---|---|--|
| Early Spring-April | Old grass sods including quackgrass and/or orchardgrass | ROUNDUP (glyphosate) 1-2 qts. in October. If annuals germinate in spring before seeding, kill with PARAQUAT ⁺ PLUS or GRAMOXONE (paraquat) 1 pt. PLUS X-77 or CHARGER. If patches of over-wintering perennials occur, spot spray with ROUNDUP at 1-2 qts. |
| | Old grass sod predominately timothy or bluegrass-bentgrass | PARAQUAT ⁺ PLUS or GRAMOXONE (paraquat) 1 qt./A PLUS X-77 or CHARGER. Applied after 1-2 inches of new growth in spring. Split applications increase kill: 1 pt. 2-3 weeks prior to seeding plus 1 pt. at a time-of seeding. |
| | Perennial broadleaf weeds | BANVEL 2 pts. or BANVEL 1 pt. PLUS 2, 4-D at 2 pts. in the fall prior to a spring seeding. Can be tank mixed with ROUNDUP. |
| After second hay cut in late July or early August | Old grass sods including quackgrass and/or orchardgrass | ROUNDUP 1-2 qts. applied after 4-6 inches of regrowth. |
| | Old grass sod predominately timothy and bluegrass-bentgrass | PARAQUAT ⁺ PLUS or GRAMOXONE (paraquat) 1 qt. PLUS X-77 or CHARGER. Split application increases kill: 1 pt. 2-3 weeks prior to seeding plus 1 pt. at time of seeding. |
| | Perennial broadleaf weeds | 2, 4-D 1 1/2 pt. PLUS BANVEL 1/2 pt. applied in spring after regrowth starts. Forage seedings must be delayed 3 weeks. Can be tank mixed with ROUNDUP. |

Table 4. Weed Control After No-Till Alfalfa Seeding.

| Weed Problem | Herbicide | Comments |
|------------------------|---|--|
| Annual broadleaf weeds | BUTYRAC 200, BUTYRAC ESTER or BUTOXONE (2, 4-DB) | Apply when legumes are in 2-4 trifoliolate leaf stage. For weeds less than 1 inch tall use 1-2 qts.; if 1-3 inches tall or on rosettes over 3 inches wide, use 2-3 qts. For seedling smart-weed use 3 qts. |
| Annual grass weeds | None available. All available must be preplant-incorporated | Clipping is the only means of controlling grass weeds. Degree of control of many grasses is quite limited. |