L-425

Chemical Weed Control

in Lawns

TEXAS AGRICULTURAL EXTENSION SERVICE
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Chemical Weed Control In Lawns

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A VIGOROUS TURF is the best control for weeds. Weeds and weedy grasses usually are not a problem when a well-adapted lawngrass is properly established, fertilized, mowed and watered. A thin, weak stand of grass will be invaded by weeds. Killing weeds with chemicals will not keep them out unless followed by lawn management practices that encourage the grass to grow vigorously enough to compete with the weeds. Details on lawngrass adaptation and its proper establishment and management are given in Bulletin 203, "Home Lawns," available from your county extension agents.

Thorough seedbed preparation and allowing one or more crops of weeds to germinate before planting the lawngrass will help reduce weed problems. Choosing the right grass is important, because lawn grasses differ in their ability to keep out weeds. Vigorous St. Augustine chokes out most weeds during the growing season. Even winter weeds have little chance to grow in a dense turf of this grass. Summer weeds are not too troublesome in a thrifty turf of Bermuda or zoysia, but winter weeds often are a problem. Compared to Bermuda, the rate and habit of growth of bluegrass, perennial ryegrass and buffalograss make weed invasion a constant threat where they are used as lawn covers.

Regular, frequent mowing at the right height controls many common lawn weeds, such as pepperweed, plantain, buttercup, nightshade, hoarhound and Johnsongrass. Proper mowing heights are 1 to 1½ inches for Bermuda, 1½ inches for St. Augustine, zoysia and buffalo, and 1½ to 2 inches for bluegrass and ryegrass. The grass should be mowed often enough that not more than ¾ to 1 inch of leaf tip is removed at any one clipping.

Proper fertilization eliminates many weeds, such as facelis and three-awn (needlegrass). Sandbur occurs mainly in Bermuda and other turf that is thin because of lack of fertility and moisture. Lawngrass should receive an application of complete fertilizer in the spring and in the fall. The fertilizer should be applied at a rate to supply 2 pounds of actual nitrogen per 1,000 square feet. Additional nitrogen should be applied as needed during the growing season to keep the grass green.

Chemicals should be applied when weeds are growing rapidly and before seed are formed. Treatment usually will not be effective when applied to weeds that are maturing or growing slowly because of drouth or approaching dormancy. Chemicals to control upright or semiprostrate annual weeds, such as burclover, henbit, annual bluegrass, rescuegrass and sandbur, should be applied when the weedy plants are no taller than 3 inches.

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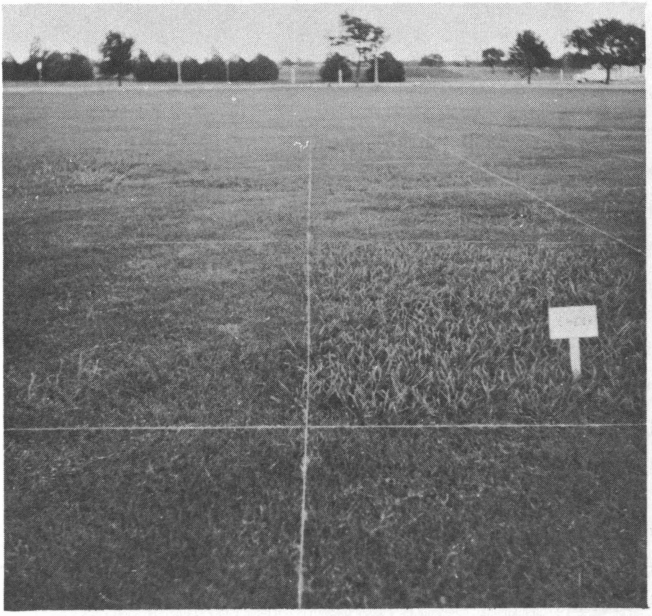
If taller, they should be mowed closely and the chemical applied after 3 to 4 days' regrowth. Low-growing annual weeds, such as carpet burweed and goathead, should be treated when the plants are young and before they bloom. Perennial weeds, such as dandelion, dock, matt chaff-flower, K. R. bluestem and smutgrass, should be treated when they are growing rapidly, but after they have developed considerable leaf area. *Thorough covering of the leaves and stems with the chemical is necessary for good weed control.*

The weeds listed in Table 1 are found commonly in lawns. Length of life, shown in Column 1, often determines choice of treatment. Annual plants begin growth each year from seed; biennial plants live through two growing seasons and usually do not make seed until the second season; and perennial plants live 3 or more years, coming back each year from vegetative parts, crowns, rhizomes and bulbs and from seed. Seasons shown in the third column, under "treatment period," indicate the time of year when chemical treatment will be most effective. This time will vary for some plants according to geographic location, from South to Central to North Texas and from East to West Texas.

Numbers given in column 4, under "chemical treatment" refer to the numbered chemical treatments described on pages 6-9. When more than one treatment is listed, they appear in order of preference. Some of the chemicals listed are poisonous and others are flammable. All should be handled carefully.



Dallisgrass-free plots of Bermudagrass were treated with disodium methylarsonate. The check plot was not treated.

TABLE 1. COMMON LAWN WEEDS IN TEXAS

Weed	Length of life*	Treatment period	Chemical treatment
BROAD-LEAVED WEEDS			
Aster	P	Spring to summer	6
Bedstraw or cleavers	A&P	Spring	7-4
Burclover, black medic and true clovers	A	Fall and winter	1-5-6
Carpet burweed	A	Fall and winter	6-5
Chickweed	A&P	Fall to winter	1-7
Cornsalad or lamb's lettuce	A	Winter to spring	6
Cranesbill and filaree	A	Winter to spring	1-6
Crowpoison, wild onion and wild garlic	P	Fall and winter	7-5
Dandelion	P	Fall and winter	6
Dichondra or ponyfoot	P	Winter and spring	1-6
Dock	P&A	Fall and winter	6
Dwarf-dandelion	P&A	Fall and winter	6
Fogfruit	P	Spring	6
Fleabane	A&P	Winter to spring	6
Goathead	A	Spring	6-1-4
Heartleaf nettle	A	Winter and spring	7
Henbit	A	Fall and winter	1-6-5
Lespedeza	A	Spring	1-6-5
Mallow	A	Fall to winter	6-1-4
Matt chaff-flower	P	Spring	6-7
Modiola	P	Fall to spring	6
Morningglory	P&A	Spring to summer	6-7
Oxalis	A&P	Fall to spring	1-5
Pigweed (prostrate types)	A	Spring to summer	6
Plantain	A&P	Winter to spring	6
Poisonivy	P	Spring to summer	8-6
Prostrate lawnflower	P	Spring and summer	6-7
Ragweed	P&A	Summer to fall	6

TABLE 1. COMMON LAWN WEEDS IN TEXAS—Con.

Weed	Length of life*	Treatment period	Chemical treatment
Spurges (prostrate types)	A&P	Spring to fall	6-5
Sowthistle	A	Winter to spring	6
Sweetclover	A&B	Fall to spring	1
Vetch	A	Winter to spring	1-6-5
GRASSES AND GRASS-LIKE WEEDS			
Annual bluegrass	A	Fall and winter	1
Bahiagrass	P	Spring to summer	2-4
Barnyardgrass	A	Spring to summer	2-3-4
Bermudagrass	P	Spring to fall	8-4
Bluestems	P	Spring	2-4
Carpetgrass	P	Spring to summer	2-4
Crabgrass	A	Summer to fall	2-3-4
Crowfootgrass	A	Spring to fall	2-4
Dallisgrass and other paspalums	P	Spring	2-3-4
Dropseeds, incl. smutgrass	P&A	Spring to summer	2-4
Goosegrass (silver crabgrass)	A	Spring to summer	2-3-4
Johnsongrass	P	Spring to summer	8-4
Little barley	A	Fall and winter	1
Nutgrass	P	Spring to fall	8
Rescuegrass, cheat and other annual bromes	A	Fall and winter	1
Ryegrass	A	Fall and winter	1
Sandbur	A&P	Spring to summer	2-3-4
Sedge	P	Spring and summer	2
Signalgrass	A&P	Spring to summer	2-4
Texas wintergrass	P	Fall and spring	4-2
Tumblegrass	P	Spring to summer	2-4
Windmillgrass	A&P	Spring to summer	4

*A—Annual
B—Biennial
P—Perennial

1. ENDOTHAL. For easy-to-kill, broad-leaved weeds, such as burclover and henbit, use 3 to 4 tablespoons of endothal per gallon of water. For grass-type weeds, such as rescuegrass and ryegrass, use 6 to 7 tablespoons of endothal per gallon of water. Use 1 teaspoon of liquid household detergent or commercial wetting agent, or use 3 tablespoons of dry household detergent per gallon of endothal-water mixture. Apply the mixture as a broadcast spray or as a mop until the leaves and stems of the weeds are wet.

For effective control, use the endothal when the weeds are small; if they are more than 3 inches high, mow them closely and then treat after 3 to 4 days' regrowth.

Caution: Endothal should not be applied to ryegrass or bluegrass, for it likely will kill them. Endothal is toxic to all warm-blooded animals when taken internally. Avoid prolonged contact with the skin. Keep the material out of reach of children and domestic animals. Follow closely the directions on the container.

2. DISODIUM METHYLARSONATE. For spot treatment, use 5 tablespoons of wettable powder containing approximately 20 percent soluble arsenic or 7 tablespoons of wettable powder containing 12 percent soluble arsenic per gallon of water; or use 14 to 16 tablespoons of liquid disodium methylarsonate per gallon of water. A wetting agent may increase discoloration on the lawngrass, but it will make the treatment more effective. Use household detergent or commercial wetting agent at the rate of 1 teaspoon of liquid material or 3 tablespoons of dry material per gallon of chemical and water mixture. Apply the disodium methylarsonate-wetting agent-water mixture as a spray or mop to thoroughly wet the stems and leaves of weedy grasses. For area spray application, use 10 to 14 ounces of the wettable powder or 1 pint of the liquid formulation in 4 gallons of water per 1,000 square feet, including a wetting agent as described for spot treatment.

Weedy grasses to be treated should be mowed 3 to 4 days before treatment. Treated areas should not be mowed or watered within 48 hours after application of the chemical. Disodium methylarsonate will cause some discoloration on Bermudagrass, but it usually disappears in 7 to 14 days. The material kills St. Augustinegrass, but small spots killed by spot-treatment should be covered by new growth in 4 to 6 weeks.

Caution: Disodium methylarsonate contains arsenic which is poisonous. Avoid skin contact with the material and breathing the spray mist. Keep the material out of reach of children and domestic animals.

3. AMINE METHYLARSONATE. Use 12 to 14 tablespoons of the liquid material per gallon of water for spot treatment. Apply the mixture as a spray or mop to thoroughly wet the leaves and stems of the weeds. For area spray application use 12 to 14 ounces in 2 to 4 gallons of water per 1,000 square feet. To increase effectiveness, use household detergent or commercial wetting agent at the rate of 1 teaspoon of liquid or 3 tablespoons of dry material per gallon of water. Discoloration on Bermudagrass is less likely with amine methylarsonate than with the disodium form. It should be used only as a spot-treatment in St. Augustinegrass.

Caution: This material also contains arsenic and is poisonous. Observe the same precautions as given for disodium methylarsonate.

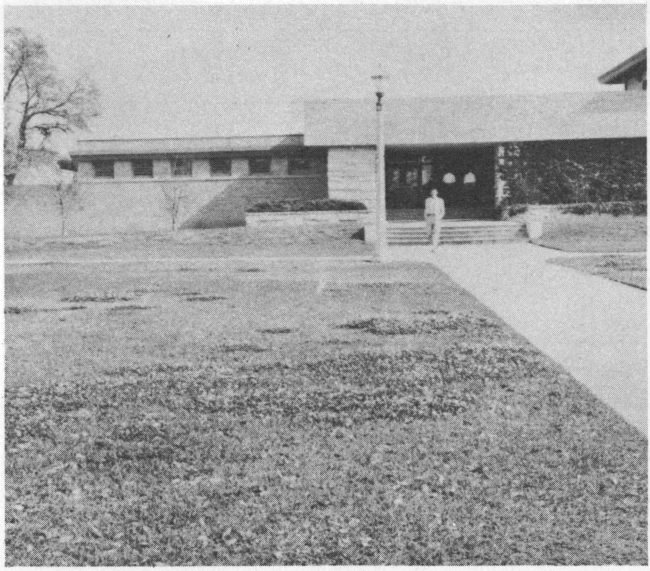
4. NAPHTHA. Apply naphtha as a coarse spray or mop to thoroughly wet the leaves and stems of weedy plants. Lawn grasses will be killed by naphtha, but dead spots should cover over in a few weeks. Naphtha is explosive and will blister the skin covered by saturated clothing.

5. AMMONIUM NITRATE. Dissolve 1 pound of ammonium nitrate per gallon of water. Allow the solution to settle a few minutes and strain it, if it is to be applied with a sprayer. Apply the solution broadcast with a sprinkler can or sprayer at the rate of 4 gallons per 1,000 square feet. Spot treatment should be avoided since the nitrogen will cause green spots that are difficult to eliminate. Mow the plants closely 3 to 4 days before treatment. The solution is very corrosive and sprayers or sprinkler cans used to apply it should be rinsed thoroughly. It may ruin the sprayer eventually, despite thorough rinsing.

Dry ammonium sulfate may be used as a substitute treatment, although it is not as effective because coverage is not as good. The lawn should be mowed 3 to 4 days before treatment. Wet the plants thoroughly and apply 10 to 12 pounds of ammonium sulfate per 1,000 square feet while the leaves are wet.

6. 2,4-D. Use 2 tablespoons of the amine form of 2,4-D per gallon of water, provided its strength is 4 pounds of acid equivalent per gallon of concentrate. Follow directions on the container for mixing 2,4-D formulations that do not contain the 4 pounds of acid per gallon. Use a household detergent or commercial wetting agent at the rate of 1 teaspoon of liquid or 3 tablespoons of dry material per gallon of water.

Apply the 2,4-D solution as a mop or with a sprinkler can to thoroughly wet the leaves of weeds. Some weeds will start dying within 48 hours, others may require 2 weeks to show the effects. Broad-leaved annual weeds that are susceptible to 2,4-D can be killed with one



White clover and other winter lawn weeds invaded this lawn when the St. Augustinegrass was thinned by disease.

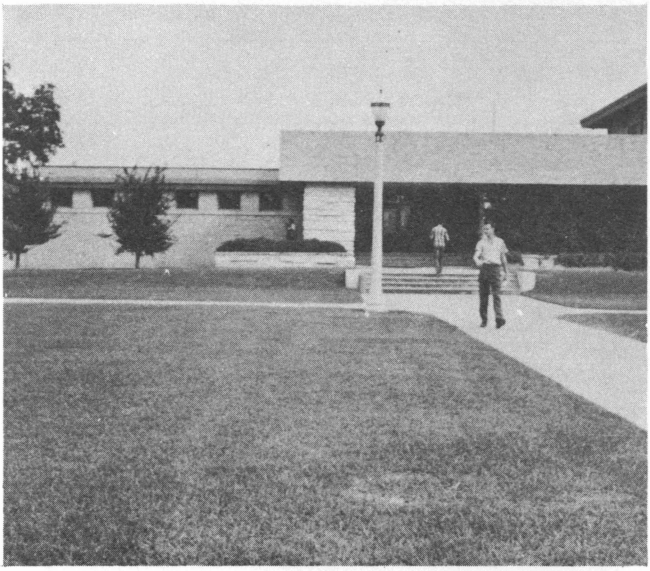
application. Weeds less susceptible, especially some perennials, may require retreatment.

Caution: Use only the amine form of 2,4-D. The ester forms are more volatile and more likely to damage desirable plants. Never apply 2,4-D under pressure; the drifting mist can cause severe damage to desirable shrubs, flowers and trees. Containers used to mix or carry 2,4-D solutions should not be used to apply other materials to flowers, shrubs or trees. Do not apply 2,4-D when the temperature is below 50 or above 90 degrees F.

7. SILVEX. Use 2 tablespoons of silvex per gallon of water or kerosene with 1 teaspoon of commercial wetting agent or liquid household detergent or 3 tablespoons of dry detergent. Apply the solution in the same manner as suggested for 2,4-D. Follow the same precautions as described for 2,4-D. Mix and apply this chemical carefully since it may damage the lawngrass temporarily.

8. TREATMENTS FOR NONTURFED AREAS. The treatments suggested here are for hard-to-control weeds occurring in driveways, parking areas, fencelines and similar areas that are not turfed. *Do not use these treatments on lawns or other turfed areas.*

To control Johnsongrass and Bermudagrass, use ½ pound of sodium dalapon per gallon of water. Apply the solution as a coarse spray to thoroughly wet the leaves of the grass. Dalapon is slightly corrosive and it kills most grasses. Do not saturate the root area of valuable flowers, shrubs and trees. Wait 5 to 7 weeks before planting areas treated with dalapon during the growing season.



One application of endothal eliminated the clover and other winter lawn weeds.

Use naphtha or similar solvent oils for nonselective spray application to nutgrass, Bermudagrass and Johnsongrass. Apply the oil to thoroughly wet the stems and leaves. Re-treat when regrowth occurs. These oils are flammable and will blister the skin covered by saturated clothing. Naphtha kills or defoliates any plant to which it is applied.

To control poisonivy, use 4 tablespoons of silvex per gallon of water or kerosene. Spray the solution on stems and leaves of the individual plants. This solution will damage lawngrass and will kill flowers, shrubs and trees. Containers used to mix or apply silvex should not be used to apply other materials to flowers, shrubs or trees.

Knapsack, trombone type, gravity-flow and hose-attachment sprayers may be used with materials that are to be applied as a spray. Sprinkler cans that deliver fine streams or small droplets can be used to apply some chemicals. A mop for applying 2,4-D, silvex and other chemicals is easily made by tying a sponge or cloth to a stick.

Delay broadcast spray applications for weed control on newly seeded lawns until the grass has been mowed two or three times.

LAWN WEED CONTROL POINTERS

- Use an adapted lawngrass.
- Apply a complete fertilizer in the spring and fall at the rate of 2 pounds of actual nitrogen per 1,000 square feet. Use additional nitrogen during the growing season to keep the grass green.
- Mow regularly and frequently at the proper height. Mow often enough that not more than 3/4 to 1 inch of leaf tip is removed at any one mowing.
- Control diseases and insects. Grass killed by these may be replaced by weeds.
- Use chemicals for weed control only when necessary. Mix and apply chemical solutions carefully.
- Make chemical applications when weeds are small and growing rapidly. Thorough coverage is necessary for effective control.

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