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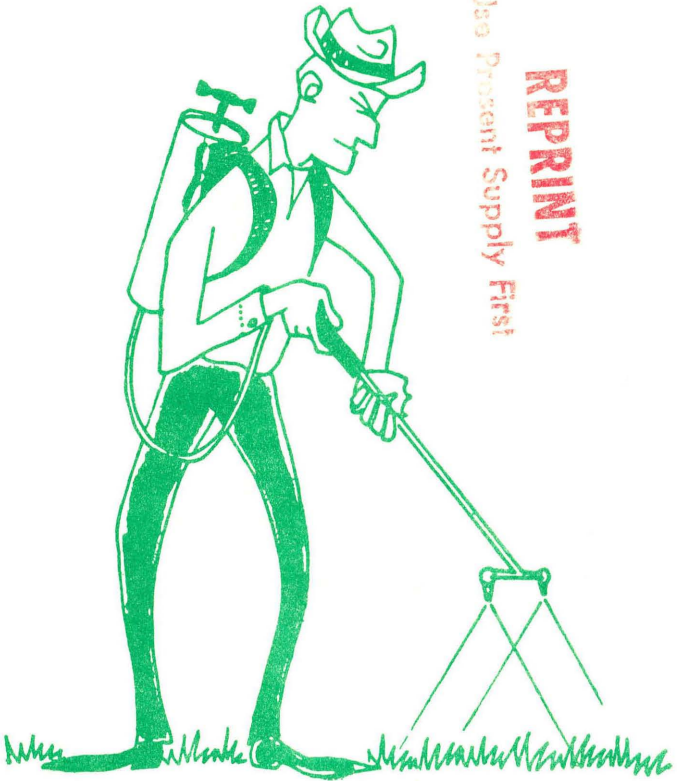
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# LAWN WEED CONTROL



**REPRINT**  
Use Present Supply First

COOPERATIVE EXTENSION SERVICE

Michigan State University  
East Lansing

## LAWN WEED CONTROL

*Department of Crop Science*

A dense, healthy, vigorously growing turf is the most effective weed control measure for lawns. In many lawns, though, broadleaved weeds and weed grasses become established. In such lawns, it is first necessary to destroy the weed plants, then to provide seed, fertilizer, water, and the care needed to produce good turf. Weed plants in turf often can be destroyed with one of the chemical weed killers now available.

### CHOICE OF SPRAYER

You can use any kind of applicator that will spread the desired amount of chemical evenly over a given area of turf. When you apply the chemical, the application rate must be completely under your control.

One of the most commonly used applicators is the compressed air liquid sprayer. This may have a single nozzle or a short boom with two or more nozzles. A tank capacity of 2 to 3 gallons is convenient for turf areas of up to 20,000 square feet.

A one-gallon glass jug equipped with a screw-on sprinkler and an air vent pipe is satisfactory for small turf areas of 1,000 to 5,000 square feet. This inexpensive applicator can be very effective for small patch treatments.

A number of weed killers now are sold as dry formulations. You can apply these with a small hand spreader of the type used for fertilizer. Such a spreader should have some method for positive control of the rate of flow and a hopper that holds at least 15 pounds of dry material.

Large estates and public lawn areas generally require the use of power sprayers and trained crews for effective chemical weed control.

For touch-up applications and for certain hard-to-kill weeds that are found as single plants, a hollow wand fitted with a felt or sponge rubber plug at the lower end is very useful. You can fill the wand with a strong solution and apply the chemical to small

areas where it wouldn't be practical to use such a concentration in a larger sprayer. This is a single plant application and is required for some weeds.

### CALIBRATION OF SPRAYER

Most chemical weed killers are not only effective on weed plants but also will kill turf grasses if too much is applied. It is essential to know the amount of material that a piece of equipment will apply on a given area. You can find this rate only by trying out the sprayer or spreader with water or some other harmless material. Do this calibration on the turf under conditions similar to those which will exist when you apply the chemical.

Follow these steps to determine the capacity of your equipment:

#### Compressed Air Sprayers

1. Measure 1,000 square feet of turf (a block 20 x 50 feet or equivalent), using twine to outline the block. (Most dosage recommendations are made for 1,000 square feet of area.)
2. Pour in a measured amount of water (for example, 3 gallons).
3. Pump up the sprayer to a reasonable pressure. (On a 2- or 3-gallon sprayer, 40 to 50 full strokes of the pump are suggested.)
4. Open the cut-off valve and walk at a reasonable pace over the block until all the surface is covered.
5. Release the air pressure and measure the amount of water left in the tank.
6. Subtract the amount left in the tank (step 5) from the amount placed in the sprayer to find the amount used in spraying 1,000 square feet.

#### Example:

3 gallons put in sprayer – 2 gallons left = 1 gallon used to cover 1,000 square feet. \*

The amount found in step 6 is the base for figuring how much chemical to use in each gallon of water when you actually spray. The actual amount of water used is not important, but whatever the amount, it must be a known quantity. Thus, if the suggested rate of chemical is 2 ounces per 1,000 square feet and your sprayer applies 1 gallon per 1,000 square feet,



you mix 2 ounces for each gallon of water the sprayer will hold. For instance, a 3-gallon sprayer will take 6 ounces of chemical.

### Dry Spreaders

1. Measure 1,000 square feet of turf (20 x 50 feet).
2. Choose a setting on the feed-regulating device.
3. Weigh out about 5 to 10 pounds of the dry chemical and place it in the hopper. (Overdosage of these materials will seldom cause injury, but would be expensive.)
4. Open the feed and walk over the area until it has been fully covered.
5. Weigh the material left in the spreader.
6. Subtract the remainder from the original amount placed in the hopper to find how much you applied to the 1,000 square feet of turf.
7. Since most dry herbicides are sold in a ready-to-apply form, you may have to change the feed setting and repeat the process on a different area

until you find a setting which is correct for the amount suggested on the product label.

These calibrations apply as much to the person using the equipment as to the sprayer or spreader. For that reason, keep your walking speed and the pressure in the tank as constant as possible.

### BASIC PRINCIPLES OF WEED CONTROL

Controlling weeds in turf is actually quite simple. However, you should keep certain basic principles in mind. These principles are:

1. All weeds have periods of active growth and periods of relatively slow growth.
2. Herbicides are most effective when applied to plants that are growing rapidly.
3. Ornamental plants also have alternating periods of active and slow growth.
4. Risk of injury to valuable plants from accidental contact with herbicides is least when these plants are dormant or growing slowly.

### NAMES OF HERBICIDES

| Common name      | Trade name         | Chemical  | Common formulation | Amount of active ingredient |
|------------------|--------------------|---|--------------------|-----------------------------|
| 2,4-D salt       | Numerous           | Salt of 2,4-dichlorophenoxyacetic acid                        | Liquid             | Varies                      |
| 2,4-D amine      | Numerous           | Amine salt of 2-4-D   | Liquid             | Varies                      |
| 2,4-D ester      | Numerous           | Ester of 2,4-dichlorophenoxyacetic acid                       | Liquid             | Varies                      |
| Silvex           | Numerous           | 2,4,5-trichloropropionic acid                                 | Liquid             | 4 lb. per gallon            |
| Stoddard solvent | Several            | Naptha  | Liquid             | 15 percent                  |
| Endothal         |                    | Disodium 3,6 endoxohexahydrophthalate                         | Liquid             | 2 lb. per gallon            |
| DMA              | Numerous           | Disodium methyl arsonate                                      | Liquid             | Varies                      |
| AMA              | Numerous           | Ammonium methyl arsonate                                      | Liquid             | Varies                      |
| DCPA (Dacthal)   | Numerous           | 2,3,5,6-tetrachloroterephthalic acid                          | Granular           | Varies                      |
| DMPA (Zytron)    | Crab Grass Killer  | 0-(2,4-dichlorophenyl) 0-methyl isopropylphosphoramidothioate | Granular           | Varies                      |
| Dalapon          | Dowpon             | 2,2-dichloropropionic acid                                    | Powder             | 85%                         |
| Amitrole-T       | Amitrole-T, Cytrol | 3-amino-1,2,4-triazole plus ammonium thiocyanate              | Liquid             | 2 lb. per gallon            |

5. The response of plants to a herbicide depends on the dosage applied, the material used to dilute the concentrated chemical, and the species of weed.
6. Weed grasses are harder to kill than are most broad-leaved weeds.
7. Seedlings of all species are more easily killed than are older plants of these species.
8. Turf grasses vary in their tolerances for herbicides but none are completely immune. Thus, dosage levels must be kept below the point where serious injury is likely to occur.

Since many chemicals are specific for one or a few species of weeds, it is necessary to know what weeds are present in the turf. You can get help in identifying weeds from your county agricultural agent.

With these principles in mind, it is only necessary to select a chemical suitable for the weed or weeds to be killed, measure the correct amount for the area to be treated, apply the mixture uniformly, and then wait for the weeds to die.

After the weeds have been killed, proper management practices are required to keep the turf from becoming reinfested. These include: (1) Reseeding thin or bare areas with grasses adapted to the locality, (2) regular and adequate fertilizing, (3) watering adequately in dry seasons, and (4) mowing at a height which will permit reasonable growth of grass tops and roots.

Table 1 lists common weeds, suitable herbicides, dosages, and times for application. In some cases, repeat applications may be required to eliminate weeds. In a few cases, no successful chemical control measure has been found.

You can get more information about lawn care by reading Michigan State University Extension Folders F-211, "Making a New Lawn," and F-212, "Care of an Established Lawn." Single copies are available free from your county agricultural agent or from Michigan State University Bulletin Office, P. O. Box 231, East Lansing, Michigan.



**TABLE 1 — LAWN WEED CONTROL**  
Control with 2,4-D (amounts based on 4 pounds per gallon concentrate)

| Weed                                 | Chemical      | Large areas,<br>pounds<br>per acre | Small areas,<br>Teaspoons per<br>1000 sq. ft. | Carrier | Remarks   |
|--------------------------------------|---------------|------------------------------------|---|---------|---|
| Bindweed                             | 2,4-D         | 1                                  | 3   | Water   | Repeat as new growth appears. Treatment may be needed two or more seasons.                  |
| Burdock                              | 2,4-D         | 1                                  | 3   | Water   | Spray in fall or early spring.  |
| Dandelion                            | 2,4-D         | 2                                  | 6   | Water   | Gives best results if sprayed in fall. Spring treatment should be done before weeds flower. |
| Chicory                              | 2,4-D (ester) | 2                                  | 6   | Water   | Spray on fall rosettes.   |
| Hoary alyssum                        | 2,4-D (ester) | 2                                  | 6   | Water   | Spray fall rosette stage only.  |
| Horsetail                            | 2,4-D (ester) | 1                                  | 3   | Water   | Repeat as often as new growth appears.  |
| Lamb's quarters                      | 2,4-D         | ½                                  | 1½  | Water   | Usually needed only on spring-seeded turf. Spray only after first mowing.                   |
| Mossy stonecrop                      | 2,4-D (ester) | 2                                  | 6   | Water   | Use spring or fall treatment. May require repeat treatment the following season.            |
| Plantains:<br>Buckhorn<br>Round leaf | 2,4-D         | 1                                  | 3   | Water   | Treat in early spring before flower spikes appear.  |
| Ragweed                              | 2,4-D         | ½                                  | 1½  | Water   | Spray new turf only after first mowing.   |
| Red root pigweed                     | 2,4-D         | ½                                  | 1½  | Water   | Spray new turf only after first mowing.   |
| Thistles                             | 2,4-D         | 1                                  | 3   | Water   | Spray in fall. Canada thistle will require several applications.                            |
| Wild carrot                          | 2,4-D (ester) | 2                                  | 6   | Water   | Spray in fall.  |
| Yellow rocket                        | 2,4-D         | 1                                  | 3   | Water   | Spray in fall. Use early spring treatment for fall-seeded turf.                             |

### SPECIAL TREATMENTS

|                                  |                          |   |   |       |  |
|----------------------------------|--------------------------|---|---|-------|--|
| Black medic                      | Endothal<br>(2 lb./gal.) | 3 | 9 | Water | Spray in early summer when in flower.  |
|                                  | Silvex<br>(4 lb./gal.)   | 1 | 3 | Water | Apply in spring or fall when seedlings appear.   |
| Chickweed<br>Common<br>Mouse-ear | Silvex<br>(4 lb./gal.)   | 1 | 3 | Water | Apply in fall, or in spring before mid-May.  |
| Clover                           | Silvex<br>(4 lb./gal.)   | 1 | 3 | Water | Requires good leaf surface. Wait 2 days before mowing. Apply in fall, or in spring before mid-May. |
|                                  | 2,4,5-T                  | 1 | 3 | Water | For summer application.  |
| White cockle<br>Various          | Silvex<br>(4 lb./gal.)   | 1 | 3 | Water | Spray in fall on new rosettes. Handpull old plants.  |

|                           |                          |        |                 |                  |   |
|---------------------------|--------------------------|--------|-----------------|------------------|---|
| Ground ivy<br>Henbit      | Silvex<br>(4 lb./gal.)   | 1      | 3               | Water            | Repeat application at 2-week interval. Apply in spring before mid-May, or in fall on ground ivy.                            |
| Heal-all<br>Moneywort     | 2,4-D (ester)            | 2      | 6               | Water            | Repeat application at 2-week intervals.   |
| Hawkweed                  | 2,4-D (ester)            | 2      | 6               | Kerosene         | Spray in fall or early spring. Avoid drift of spray into woody ornamental plants. Use as spot treatment only.               |
| Knotweed                  | Endothal<br>(2 lb./gal.) | 2      | 8               | Water            | Apply when weeds have at least 3 to 4 true leaves.  |
|                           | 2,4-D (ester)            | 1      | 3               | Water            | Apply in early spring when plants are in 2- to 3-leaf stage of growth.  |
| Ox-eye daisy              | 2,4-D (ester)            | 2      | 6               | Kerosene         | Spray in fall. Avoid drift to woody ornamentals. Use as spot treatment only.<br>Apply in fall, or in spring before mid-May. |
|                           | Silvex<br>(4 lb./gal.)   | 2      | 6               | Water            |   |
| Sorrel                    | Sulfuric acid            |        |                 | Water            | Have druggist mix a 10-percent solution. Apply as spot treatment. Grass leaves will turn white.                             |
| Speedwell                 | Endothal<br>(2 lb./gal.) | 2 to 4 | 8               | Water            | Apply in early summer before seeds are mature.  |
| Barnyard grass            | DMA                      | 10     | 4               | Water            | Apply before grass plants are 4 to 6 inches tall.   |
| Crabgrass                 | DPCA (Dacthal)           | 10     | —               | Spread dry       | Apply in April before crabgrass emerges.  |
|                           | DMPA (Zytron)            | 15     | —               | Spread dry       | Apply in April before crabgrass emerges.  |
|                           | Calcium arsenate         | 370    | 8.5 lb.         | Spread dry       | Apply in April before crabgrass emerges.  |
|                           | DMA<br>AMA               |        | 1½ oz.<br>1 oz. | Water<br>Water   | Apply when crabgrass is 2 to 3 inches tall. Repeat twice at 7-day intervals.  |
| Foxtail                   | DMA                      |        | 4               | Water            | Apply when foxtail is 2 inches tall.  |
| Sandbur                   | Stoddard Solvent         |        | 1 gal.          | Without dilution | Apply when sandbur is at least 2 inches tall.   |
| Tall fescue<br>Quackgrass | Amitrole-T               | 4      | 16              | Water            | May reseed in 5 weeks if soil is thoroughly tilled.   |
| Silver crabgrass          | DMA                      |        | 4               | Water            | Repeat every 10 days until 3 applications have been made.   |

### NO CHEMICAL CONTROL

|                          |      |  |  |  |                   |
|--------------------------|------|--|--|--|-------------------|
| Annual bluegrass         | None |  |  |  | Hand pull or hoe. |
| Live-forever             | None |  |  |  | Hand pull or hoe. |
| Mullein<br>Common & Moth | None |  |  |  | Hand pull or hoe. |
| Spotted spurge           | None |  |  |  | Hand pull or hoe. |
| Violet                   | None |  |  |  | Hand pull or hoe. |