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Chemical Weed Control in Trees

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CHEMICAL
WEED CONTROL
IN TREES

Simazine applied in a 3-foot band at 4 lbs. active ingredient per acre gave seasonal control of annual weeds in this tree row. For demonstration purposes, the area between tree rows was not cultivated.

Cooperative Extension Service
South Dakota State University
United States Department of Agriculture
Weeds affect trees the same way they affect other crops. They rob them of moisture, plant food, and light.

Preventing weed growth in tree rows is especially important. Tree survival and growth are always better in plantings that are kept free of weeds. Chemical weed killers which control weeds in the rows for a full growing season will eliminate handwork or special equipment.

Soils of medium or heavier texture and those with high organic matter content make application of herbicides safer for the trees. Make applications on very sandy soils on an experimental basis only.

WHEN AND HOW TO APPLY

Trees should be at least 1 year old before treatment. Early spring treatment, before weeds come up, gives best results. Fall applications can be made if done before the ground freezes. Such applications are advantageous since spring work may create work schedule problems. As a rule, May applications are not as successful as those in April since moisture needed for herbicide incorporation or activation may be limited at this time. The soil surface should be free of trash. Do not disturb the treated area after application.

Observe the recommended rate of application carefully. Do not use the principle, "if a little's good, a lot's better." Apply the herbicide in a band 3 feet wide in the tree row. A trip down each side of the tree row spraying an 18-inch band is the best method of application.

A hand-operated sprayer works well but should be shaken to keep the chemical from settling out. Suitable nozzle tips are TeeJet 8002, 8003, or 8004. The nozzle screen should not be finer than 50 mesh. Maintain a pressure of 30 to 50 pounds in the sprayer.

WHAT HERBICIDE TO USE

**Diuron.** This chemical is sold under the brand name Karmex. It has been tested a number of years and has given satisfactory results at an application rate of 5 pounds active ingredient per acre treated. The percentage of active chemical on the manufacturer's label will make it possible to determine the rate of application. For example, if the chemical contains 80% active ingredient, you would apply 6 1/4 pounds per acre of the chemical as it comes from the container (80% x 6.25 = 5 pounds active ingredient).

Measure or pace off 100 feet of tree row. Mix 0.7 ounce (3 1/2 level tablespoons) of diuron in about 1 gallon of water. Spray this mixture in a band 1 1/2 feet wide (3 feet total) on each side of the 100 feet of tree row. You will be applying diuron at the rate of 5 pounds per acre if your chemical is 80% active ingredient.

**Simazine.** This chemical is sold under the trade name Simazine 80W, a wettable powder containing 80% active ingredient. It has been tested 4 years in South Dakota. Results have given good annual weed control in most cases and fair control in a few. Use 4 pounds active ingredient per acre treated. Spray a 3-foot band over the row or a 1 1/2 foot band on each side, using 0.6 ounce (2 1/2 level tablespoons) in enough water to spray 100 feet of row. Apply Simazine prior to weed emergence. If weeds have emerged, mix 1 tablespoon of amitrole (1 pound per acre) per 100 feet of treated row to knock down weed growth.

**Amitrole and Amitrole T.** Amitrole is a wettable powder containing 50% active ingredient, and Amitrole T is a liquid containing 2 pounds active ingredient per gallon. They are the best chemicals available for controlling noxious weeds in trees. One treatment seldom eliminates the weeds, but there is little risk of injuring established trees.

Use 6 pounds of active ingredient of Amitrole or 4 pounds of Amitrole T per acre. Mix 3 tablespoons of Amitrole or 3 1/2 tablespoons of Amitrole T in enough water to spray 1 square rod. Be sure to keep the spray off the tree leaves.

Amitrole at 4 pounds per acre, or Amitrole T at 2 pounds per acre, mixed with Simazine at 4 pounds per acre as a band treatment makes quackgrass or bromegrass control more effective.

GENERAL SUGGESTIONS FOR OLDER TREES

1. The amount of water used is not important. Use enough to get uniform distribution of the chemical. You may find that you can cut in half the amount of water suggested in this fact sheet.

2. When cultivating between the rows, avoid throwing soil onto the treated area in the row.

3. No attempt need be made to keep Simazine off the leaves and bark of trees. Diuron may damage trees if allowed to contact the leaves. Cedar and pine leaves are not damaged by either chemical.
4. Keep the sprayer agitated.
5. Remember, chemicals not used as recommended may give good weed control but may also kill the trees.

**NEW TRANSPLANTS AND YOUNG TREES**

Very little is known about the use of chemicals for weed control in newly transplanted trees and young trees. Several chemicals appeared promising in 1960 and 1961 research plots and may be used on an experimental basis if you realize that they may not work as they did in 1960 or 1961.

Simazine and diuron at all rates between 2 and 8 pounds active ingredient per acre gave good annual weed control when applied shortly after trees were transplanted and before weeds came up in 1960. There did not appear to be any injury to caragana, redcedar, Ponderosa pine, green ash, cottonwood, American elm, or apricot. However, lilac treated with Simazine showed some injury.

The same chemicals were applied to the same species of trees 1 year after transplanting in 1961. Lilac was severely damaged, but none of the others appeared to be injured. In addition, Simazine applied to honeysuckle, wild plum, boxelder, Siberian elm, Russian olive, and cotoneaster did not appear to cause any injury.

**POWER SPRAYER CALIBRATION**

**Step 1.** Select an area for a test run that is similar to the field to be treated. Accurately measure off 660 feet.

**Step 2.** Place the sprayer on level ground and fill the tank with water. Mark the water level in the tank.

**Step 3.** Spray the test run, using the same gear and throttle setting on the tractor you will use when spraying—usually 3 to 5 miles per hour. Also use the same spray pressure you will use when spraying—somewhere between 30 to 50 pounds.

**Step 4.** Return the sprayer to the original filling position, on level ground, and measure the gallons of water required to refill the tank to the mark.

**Step 5.** Multiply 66 times the gallons of water required to fill the sprayer. Divide this answer by the width (feet) of the spray swath. This gives the number of gallons applied per acre.

**Step 6.** Determine the number of acres that can be sprayed with one tankful of spray. Divide the number of gallons in the tank by the number of gallons applied per acre.

**MEASUREMENT OF CHEMICAL FOR SPRAYS**

Determine the amount of chemical needed per acre by checking the foregoing information. Calculate the number of pounds needed in the sprayer. Multiply the acres that can be sprayed with one tankful of spray by the number of pounds required per acre. For example, a sprayer sprays 20 gallons per acre and has a 100-gallon tank. A tankful of spray solution will then spray 5 acres. If applying diuron at 5 pounds active ingredient per acre (6 ¼ pounds as it comes from the can), mix 6 ¼ x 5 = 31 ¼ pounds of diuron with one tankful of water.