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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.

SOUTH DAKOTA STATE UNIVERSITY
COOPERATIVE EXTENSION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

Chemical Weed Control in Trees

By Lyle Derscheid, extension agronomist
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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 hand work 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.

ANNUAL WEEDS

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 $6\frac{1}{4}$ pounds per acre of the chemical as it comes from the container ($80\% \times 6.25 = 5$ pounds active ingredient).

Measure or pace off 100 feet of tree row. Mix 0.7 ounce ($3\frac{1}{2}$ level tablespoons) of diuron in about 1 gallon of water. Spray this mixture in a band $1\frac{1}{2}$ 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 $1\frac{1}{2}$ foot band on each side, using 0.6 ounce ($2\frac{1}{2}$ 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.

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 research plots and may be used on an experimental basis.

Simazine and diuron at all rates between 2 and 8 pounds active ingredient per acre have given good annual weed control when applied shortly after trees were transplanted and before weeds came up. There

did not appear to be any injury to caragana, red cedar, 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 tree one year after transplanting. Lilac was severely damaged, but none of the others appeared to be injured. In addition, simazine applied to honey suckle, wild plum, boxelder, Siberian elm, Russian olive, and cotoneaster did not appear to cause any injury.

BROAD-LEAVED PERENNIALS

AMS. This chemical is sold under the brand name Ammate "X." Apply at the rate of 5 pounds per square rod to eliminate Canada thistle or perennial sowthistle, 6 pounds for leafy spurge and 7 pounds for Russian knapweed or field bindweed in established trees. Do not apply the spray on the trees. A highly concentrated solution (6 pounds AMS in 1 gallon of water) applied to the point of "run-off" is a recommended method of killing stumps.

Amitrole and Amitrole-T. Amitrole is a wettable powder, containing 5% active ingredient, sold under the brand name "Weedazol" and "Amino Triazole." Amitrole-T is a liquid, containing 2 pounds active ingredient per gallon, sold under the brand names "Cytrol" and "Amitrole-T."

Use 6 pounds of amitrole (12 pounds of 50% powder) or 4 pounds of amitrole-T (2 gallons) per acre. Mix 3 tablespoons of amitrole or 3½ tablespoons of

amitrole-T in enough water to spray 1 square rod. Be sure to keep the spray off the tree leaves. These chemicals are equal to AMS on thistles but less effective on other broad-leaved noxious weeds.

2,4-D. To reduce stands of thistles, leafy spurge, Russian knapweed, field bindweed, hoary cress, or other perennial weeds 10 to 25 per cent in one year, use 1½ lbs. 2,4-D acid equivalent per acre twice each season (early June and late August). Use low volatile formulations of 2,4-D such as an emulsifiable acid formulation (brand name "Weedone 638"), an oil soluble amine formulation (brand names "Emulsamine 3E" or "Dacamine"), or the lithium salt of 2,4-D (brand name "Lithate DSP"). Do not allow spray drift to contact leaves of trees—it will cause injury.

QUACKGRASS

Use simazine alone during the fall of the year or use a mixture of amitrole or amitrole-T with simazine during the spring.

Apply 4 to 6 pounds active ingredient per acre during the fall. This is 5 to 6¼ pounds of "Simazine 80" per acre (2 to 3 tablespoons per square rod).

In the spring mix 4 pounds per acre (2 tablespoons per square rod) of amitrole or 2 pounds (1 gallon) per acre (1¾ tablespoons per square rod) of amitrole-T with 4 pounds per acre (2 tablespoons per square rod) of simazine. Apply in a band at the base of the trees.

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WEED CONTROL
IN TREES