



Chemical Control of
CHEROKEE ROSE, ALDER
and
Certain Other
Pasture Weeds

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Summary

The most practical and economical method of controlling a heavy infestation of Cherokee rose is: (1) remove the top growth of roses with a rotary type mower; (2) when the new growth of roses reaches a length of 12 to 18 inches, apply 2 pounds (acid equivalent) of an amine form of 2,4-D per acre or 1 pound of the low volatile ester. Repeat the chemical treatment as often as the new growth of roses reaches the above length.

Large clumps of Cherokee rose can be killed with 10 pounds of concentrated Borascu per 100 square feet of area or other materials containing an equivalent amount of boron oxide, or with CMU at the rate of 0.17 of a pound per 100 square feet. These chemicals must be evenly distributed over the entire area covered by the roses. The soil may stay sterile for one year or longer.

Bitterweed or yellow top, marsh elder or wax weed, dog fennell or summer cedar, dock, verbena, and white thoroughwort can be controlled by applications of 1 pound (acid equivalent) of 2,4-D amine per acre mixed with sufficient water to give good coverage. Apply this mixture as often as necessary for control.

Alder can be controlled during the dormant season by applying 2,4,5-T in diesel fuel to the bottom 18 to 24 inches of the stems until thoroughly wet. Mix 2,4,5-T with diesel fuel at the rate of 8 pounds (acid equivalent) per 100 gallons of fuel. Alder may be controlled also during the summer with a foliage spray of 2,4-D or 2,4,5-T, or mixtures of the two. Mix these materials with water at the rate of 1½ pounds (acid equivalent) per 100 gallons of water. In applying, be sure to thoroughly wet each plant.

Cover Left—Large clump of Cherokee rose killed with concentrated Borascu at the rate of 10 pounds per 100 square feet; right—bitterweed controlled with 1 pound of 2,4-D amine per acre in a common lespedeza-Dallisgrass pasture. Bitterweed infestation is indicated by the amount in untreated area.

Chemical Control of CHEROKEE ROSE, ALDER and Certain Other Pasture Weeds*

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W EED CONTROL is an important pasture management practice. Many common weeds, particularly annuals, become less serious as pastures are fertilized, seeded to desirable forage species, stocked at the most favorable rate, and mowed when needed. After these are done additional investments for weed control are often profitable.

Because of peculiar growth habits, some pasture weeds are not easily controlled by competition or mechanical means. Cherokee rose, *Rosa bracteata*, is one of the best known examples. This pest is widespread in the Black Belt area of Alabama, where it is estimated that enough land is covered by Cherokee rose in nine counties to produce 1.5 million pounds of beef annually if it were in productive pasture. Cherokee rose is not a problem on forage areas that are in a short rotation with row crops. However, on permanent pastures the only satisfactory control is the use of chemicals.

Another weed pest of pastures that requires special attention is alder, *Alnus rugosa*. This bush usually grows on the best pasture soils. It makes a

dense heavy growth that is too heavy to mow with conventional-type mowers. Cutting by hand is expensive and is not satisfactory because the roots are not killed and the new growth of sprouts may reach a height of 5 to 6 feet in one growing season.

It is with pests such as these that chemical weed control is most satisfactory. Under certain conditions chemicals also may be used profitably for the control of such weeds as bitterweed (yellow top or sneezeweed) *Helenium tenifolium*, dock or sorrel *Rumex sp.*, dog fennel (cypressweed or summer cedar) *Eupatorium capillifolium*, and marsh elder (camphorweed, or wax weed) *Iva ciliata*. When wisely used, chemical weed control becomes one of the most important phases of pasture management. However, it is not a substitute for other good pasture management practices.

CONTROL of CHEROKEE ROSE

Use of 2,4-D in Open Pastures

Results from 4 years' research (1950-53) at the Lower Coastal Plain Substation, Camden, Alabama, show that Cherokee rose can be controlled with chemicals. Presented here are the procedures found most satisfactory for control of the pest in (1) open pastures containing common lespedeza and Dal-

* The results of research reported in this publication were obtained in cooperation with Lavern Brown, Superintendent, Lower Coastal Plain Substation, and E. L. Mayton, Superintendent, Piedmont Substation.

lisgrass, (2) open pastures of a white-clover-grass combination, and (3) inaccessible places.

Common lespedeza-Dallisgrass pasture. To control Cherokee rose in common lespedeza-Dallisgrass pastures, follow these steps:

1. Remove top growth of old roses. One of the best ways is with a rotary type mower.

2. When new growth or seedling roses reach 12 to 18 inches, spray with 2 pounds (acid equivalent) of an amine form of 2,4-D (2,4-dichlorophenoxy-acetic acid) per acre or 1 pound of a low volatile ester of 2,4-D. Mix the 2,4-D with enough water to give good coverage. It has been found in these experiments that 20 gallons of water per acre is enough in most cases.

While 1 pound of 2,4-D amine resulted in good control of Cherokee rose in the experiments, it did not give as complete kill as the 2-pound rate or the 1-pound rate of low volatile ester.

3. Do not spray when the lespedeza is in the seedling stage, because severe injury may occur. The first application usually can be made in May.

4. Repeat the application of 2,4-D as often as the roses reach a length of 12 to 18 inches. Two to three applications per growing season usually are required for good control. Continue the spray schedule the succeeding growing season or for as long as the Cherokee rose is present.

All Cherokee rose treated as just described for three successive years with a total of seven chemical applications were not completely dead. However, many of the old roses were killed. It appears that the larger the clump the longer it takes to obtain complete kill. Plants from seed are still coming up and it is not known how long the seed will germinate.

Slight injury on common lespedeza has been observed from the use of 2 pounds per acre of an amine form of 2,4-D or 1 pound per acre of the low

volatile ester. No injury has ever been observed on common lespedeza from the use of 1 pound of 2,4-D amine per acre, except when applied during the seedling stage. Dallisgrass has not been injured by any rate of 2,4-D tested.

White clover-grass pastures. If Cherokee roses are to be controlled in a white clover-grass pasture use the same procedure as described for a common lespedeza-Dallisgrass pasture, keeping the following points in mind:

1. Use only 1 pound per acre of an amine form of 2,4-D as long as good control is obtained. White clover can be killed with 2,4-D. As the rate of 2,4-D is increased so is the injury to the clover. Therefore, the amount of clover growth will decrease as the rate of 2,4-D is increased.

2. Do not apply 2,4-D to white clover until it is well established or during the winter when there is danger of a freeze. Clover injured by 2,4-D may be completely killed by a hard freeze.

Control in Inaccessible Places with Soil Sterilants

Where large clumps of roses are to be killed with one application, use either of the following:

1. Concentrated Borascu at 10 pounds per 100 square feet of area.

2. Borascu at 15 pounds per 100 square feet of area.

3. Gerstley Borate at 15 pounds per 100 square feet of area.

4. CMU at 0.17 of a pound per 100 square feet of area.

The above rates are minimum dosages, and poor results may be expected if less amounts are used. The chemicals must be evenly applied to the entire area covered by the roses or only poor results can be expected. Except for CMU, all of the above chemicals may be applied by hand in the dry form. Because of the small quantity needed, it is better to apply CMU in water as a spray. These chemicals at the rates designated are considered as

soil sterilants. The soil may be free of vegetation for one year or more, depending on soil type, temperature, and rainfall. All of the above materials may be applied during any season of the year. This method of control is of particular importance in inaccessible places. If roses are not controlled in those areas that are inaccessible to mowers and spray machines, they will always be a source of seed infestation.

CONTROL of OTHER WEEDS

Where 2,4-D is being used for the control of Cherokee rose as previously described, the following weeds will also be controlled. Marsh elder or wax weed, bitterweed or yellow top, dog fennel or summer cedar, dock, verbena *Verbena bonariensis*, and white thoroughwort *Eupatorium album*. Dewberry *Rubus sp.*, and St. Johns-wort *Hypericum gentianoides* will be partially controlled.

If Cherokee roses are not present, all of the foregoing weeds except St. Johns-wort and dewberry can be controlled with 1 pound (acid equivalent) of 2,4-D amine per acre. Apply as often as necessary for control.

CONTROL of ALDER

Results of experiments at the Piedmont Substation, Camp Hill, Alabama, have shown that alder can be controlled with chemicals. Treatments can be made any convenient time during the year. Frequently, it is desirable to kill brush, such as alder, during the winter. Some of the more important reasons are (1) more labor available, (2) safer to use certain chemicals from the standpoint of crop damage, and (3) easier for man to penetrate dense growth so that a better job of spraying can be done.

Dormant Treatment. Mix the low volatile ester of 2,4,5-T (2,4,5-trichlorophenoxyacetic acid) at the rate

of 8 to 12 pounds (acid equivalent) per 100 gallons of diesel fuel, or other cheap oils such as kerosene, or tractor fuel. Apply to the bottom 18 to 24 inches of the alder stems until thoroughly and completely wet. A knapsack sprayer is probably best for applying the spray because it is easily portable. A faster job usually can be done if the sprayer is equipped with a forked boom containing two spray nozzles. The fork in the boom should be curved so as to spray two sides of the stem at the same time.

The procedure and treatment described above will also kill sweet gum and several other hardwoods. However, it must be remembered that most of the hardwoods are harder to kill than alder. It is difficult to kill the oaks and persimmons because of sprouting at the base.

Brush killed as described here should not be cut down until dead.

Summer Foliage Treatment.

Where it is desirable to control alder during the summer any of the following compounds or mixtures of them were found to be satisfactory: 2,4-D amine, 2,4-D low volatile ester, and 2,4,5-T low volatile ester.

Any of these compounds will kill alder if applied at the rate of 1½ pounds (acid equivalent) per 100 gallons of water, provided the entire plant is thoroughly and completely wet. These materials are best applied with a power sprayer. It is difficult to obtain good coverage with a knapsack sprayer in tall dense stands of alder. The amount of kill will depend on how good a job of spraying is done.

PRECAUTIONS to USE

1. 2,4-D and 2,4,5-T are very toxic to many plants, such as cotton, soybeans, vegetables, and ornamental crops. Extreme care must be used to

prevent these chemicals from coming in contact with desirable plants or serious injury may result.

2. Do not spray 2,4-D or 2,4,5-T near sensitive plants, especially when the wind is blowing toward the plants.

3. If a high volatile ester of 2,4-D or 2,4,5-T is used, special precautions must be used. Some of the common high volatile esters of 2,4-D and 2,4,5-T are butyl, isopropyl, ethyl, and methyl. These compounds will volatilize in warm weather; the vapors will follow air currents and will kill or damage plants for a considerable distance. They

should not be used except in isolated places where there is no danger of drift to desirable plants.

4. Do not use a sprayer that has ever been used to spray 2,4-D or 2,4,5-T for applying insecticides or fungicides to plants. It is almost impossible to wash these chemicals out of a sprayer. Since 2,4-D and 2,4,5-T are not toxic to warm-blooded animals, sprayers used to apply these chemicals may be used for spraying livestock and barns.

5. Soil sterilants, such as the borate compounds and CMU, should not be used near desirable trees and shrubs.