

Spraying TOUGH *Weeds*

You Can Control Creeping Jennie and Canada Thistle With Two Sprayings Properly Applied

By A. L. BAKKE

TWO sprayings with sodium chlorate or Atlacide applied at the right time and in the right manner will whip Canada thistle and European bindweed (creeping Jennie).

The Iowa Station for more than 10 years has been working on the problem of killing these weeds, as well as certain other "tough" ones, in northwest-

ern Iowa. During that period we have tested a good many different methods of control. Spraying has proved successful and practical where the areas of the weeds are not too large.

It is not difficult to apply sodium chlorate or Atlacide. You merely mix 1 pound of either of these chemicals in 1 gallon of water. Then spray the weeds so that all the vegetation is thoroughly wet.

We have found that the success you have in killing the weeds depends a lot on *when* you apply the spray. To kill European bindweed, spray when the plants are in full bloom, which is usually early July. To kill Canada thistle, spray when the buds are about to appear—in late June or early July. With either thistles or bindweed, a second spray in the fall is often necessary.

In 1934 we demonstrated that one should not cut thistles before spraying. In that year we sprayed some thistles at Hawarden on July 6. They were about 3 feet high and that one spray killed about 90 percent of them. In the same year we applied the same amount of spray on some thistles at Inwood that had been cut the previous day. The Inwood spray killed very few



The Cherokee County sprayer at work on field infested with Canada thistles.

of the thistles. The second spray at Hawarden that year, applied in October, finished the killing job.

We have found that there is no advantage in mixing more than a pound to the gallon of water.

If weeds are scattered so that there are only two or three to the square rod, a pretty good way to "finish" them is to use the spot treatment. With this treatment, you don't spray, but instead, apply a small tablespoonful of dry sodium chlorate or Atlacide around the base of each plant at the ground.

A lot of farmers have had poor results in spraying European bindweed and believe the weed cannot be killed by sodium chlorate. Our early work at Hawarden, however, showed that spraying European bindweed in small grain invariably gave good results. Practically all of the patches of bindweed sprayed in small grain were completely cleared out in one season. Two sprays were made, but often there was little to spray the second time.

When European bindweed grows in small grain it becomes shaded and the reduction in light causes it to lose its trailing, prostrate form, and instead it becomes a climbing plant. When it twines around and

climbs up a plant, the leaves are exposed so that all the plant is easily wet with spray.

Since we know that the bindweed can best be killed when it is growing in the climbing form, such as in small grain, if a patch is found not in small grain, the best procedure is to plow it and seed lightly to millet.

When there is a heavy growth of bindweed, then spray. Thoroughly wet both the millet and bindweed. After spraying do nothing further until and unless the bindweed shows up again, and if new plants do appear, spray again in late September or early October.

If one finds a patch of bindweed in a cornfield and it is too late to seed millet, keep the ground fallow by cultivating with a duckfoot cultivator every tenth day the rest of the summer, and in the fall sow rye or winter wheat. That will give you a chance the following July to give it a good spraying when it is twining up the rye or wheat stalks; if necessary apply a second spray in the fall to finish off the job.

Often one finds bindweed growing along with other weeds—spray when the bindweed is in full bloom and wet everything about it.

There is one thing highly essential for you to keep in mind if you use sodium chlorate for spraying weeds—it is an extreme fire hazard when it becomes mixed with organic matter—and that organic matter can be your clothes.

As long as the sodium chlorate remains in solution, you need not fear it. It's only when it has dried



Best time to kill creeping Jennie with spray is when it's in full bloom as above. Usually a second spraying in the fall is needed to finish the job of killing it.

that it's dangerous. In applying spray, you may get your clothes wet and when they dry, after having been saturated with this solution—look out. Smoking or sparks from some metallic friction may set you on fire.

The man applying sodium chlorate spray always should wear rubber boots—doesn't make any difference how hot it is—you'll be much safer with boots on. Water is the best means of putting out a chlorate fire—have a supply of it on hand when you are spraying.

Atlacide is far less dangerous. The State Highway Commission has used 1 to 2 carloads per year for 5 years without an accident.

We have found some other important things about the time of applying these spray solutions in addition to the stage of the plants. When the temperature is extremely high and the humidity low, spraying with chlorate compounds does little good. But no matter how hot the day may be, if the humidity is high enough so that there is a pretty good dew at night, results are consistently good. Bindweed growing in barn yards, feed lots or in pastures where the organic matter and nitrogen contents are high requires a much stronger application of chlorate than plants in the open field, we have found.

We have tried using sodium chlorate and Atlacide dry as well as in spray. It takes a little more

of the material dry, but, on the other hand, it is also less dangerous applied dry. Using it dry, it should be applied in September or October. About 5 pounds to the square rod are needed. The material should be spread evenly over the infested area, which is difficult for the average person. A chlorate distributor for this purpose is of great help. The Masters Planter Co., Chicago, Ill., and the E. S. Gandrud Company, Owatonna, Minn., manufacture machines for this purpose.

Atlacide and sodium chlorate seem to be equally effective, in our experience. Of course Atlacide has a lot of sodium chlorate in it and some other material to hold down the fire danger.

The price of sodium chlorate and Atlacide is the same this year as last— $7\frac{1}{2}$ cents a pound for 100 to 500 pounds, 7 cents for 600 to 1,900 pounds, 2,000 or more pounds $6\frac{1}{2}$ cents and carload lots (minimum of

A knapsack sprayer is handy for spraying of small areas of weeds.

38,000 pounds) $6\frac{1}{4}$ cents a pound. The Brady Warehouse of Fort Dodge, Iowa, has a stock of sodium chlorate at the present time.

The Chipman Chemical Company, Bound Brook, N. J., manufactures Atlacide. This company states that reasonable supplies of Atlacide are available through their regular Iowa distributors—McKesson & Robbins at Omaha, Neb., Sioux City, Cedar Rapids, and Burlington; the Des Moines Drug Company, Des Moines; Northwest Distributing Company, Mason City; Overton Chemical Company, Sumner, Iowa. On account of differences in freight rates, the prices quoted vary somewhat.

The War Production Board, collaborating with the U. S. D. A., has established allocations of sodium chlorate and chlorate-bearing materials such as Atlacide for each state. They have been rather generous in their allocation for Iowa. For the first 6 months Iowa was to have 514,000 pounds of sodium chlorate. It is expected that the allocation for the second 6 months will approximate these figures. The sale of Atlacide is restricted to noxious weed eradication.

Spraying can be a highly successful way of killing some tough weeds.

