2, 4-D's Weed-Killing Role

A. L. Bakke
Iowa State College

E. P. Sylwester
Iowa State College

H. L. Lantz
Iowa State College

Follow this and additional works at: http://lib.dr.iastate.edu/farmsciencereporter

Part of the Agriculture Commons

Recommended Citation
Bakke, A. L.; Sylwester, E. P.; and Lantz, H. L. (1946) "2, 4-D's Weed-Killing Role," Farm Science Reporter: Vol. 7 : No. 2 , Article 3.
Available at: http://lib.dr.iastate.edu/farmsciencereporter/vol7/iss2/3
2, 4-D’s Weed-Killing Role

By A. L. BAKKE, E. P. SYLWESTER and H. L. LANTZ

SCIENCE HAS come up with a new weed-killing chemical. It looks very promising for some purposes. It’s commonly called 2,4-D (in technical terms its real name is 2,4-dichlorophenoxyacetic acid).

Some of the advantages of the new killer are these:
1. It will kill many of the weeds growing in grass (lawns, roadsides, fence rows, cemeteries, pastures, golf courses, airfields, etc.) without hurting the grass.
2. It can be applied without any fear of poisoning yourself, of hurting grass or the soil or of poisoning the livestock which may eat sprayed plants.
3. It is not corrosive to the sprayer or other metal that it may touch.
4. It will not catch on fire—one of the dangers of using sodium chlorate.

But, you may ask, how well does it kill weeds? We can answer that only partially until the chemical has been tried some more. But we do know that it will knock out such pests as dandelions and plantain in lawns with one good spraying. Our tests show that it does a good job of killing poison ivy in Iowa (this has not been true in some eastern states which report that it has not been effective there for poison ivy).

So far as farmers are concerned, we need to learn more about it before we can be sure how good a job it will do on such deep-rooted perennials as Canada thistle, bindweed (creeping jenny), horse nettle and the like. With our experience to date, we think that it is going to take at least two sprayings to kill Canada thistle. It has seemed to do a better killing job with bindweed, but last year (1945) we found that we had to spray a second time to kill new growth. Now we are waiting to see whether the second spraying last year finished the job.

Grassy Weeds Live

Because 2,4-D is friendly to the grass family, you can’t expect to kill the grassy weeds with it. That goes for quack grass, foxtail, dropseed grass and crab grass. Oats is a member of the grass family. Some experiments have been reported in which annual weeds in oats and barley have been knocked out by spraying with dilute and light applications of one of the commercial forms of 2,4-D now on the market.

The grassy weeds are some of the most bothersome in gardens. Here 2,4-D doesn’t hold too much promise. We have found that it kills beets, onions, string beans, navy beans, pole beans, carrots, peas, tomatoes and soybeans. It’s evident that you can’t trade your hoe and other garden implements for a knapsack sprayer and some 2,4-D and then rest in peace.

But because 2,4-D doesn’t hurt bluegrass, reed canarygrass, timothy, red top, bromegrass and orchard grass, you can use it to kill weed patches in these grasses without hurting the stand.

Besides killing many garden crops, 2,4-D also will kill many of the ornamental plants. In spraying lawns and other places where ornamental plants are near, you will need to watch this.
When to Apply

Too little work has been done with 2,4-D to have all of the answers of how to use it. But it appears that the air temperature should be at least 70 degrees or above when you spray with it. We have found that it sometimes injures lawns when it has been applied when the temperature is 90 or above.

If you use a 2,4-D spray on your lawn and the grass shows some injury in 2 or 3 days, thoroughly water it with a sprinkler. The best time of day to spray is usually early afternoon when the temperature is between 80 and 85 and when it isn’t likely to go much higher during the rest of the day.

Soil moisture should be high and the plants actively growing when sprayed. If you can find a time with the right temperature after a rain and the weather forecast is for “continued fair and clear,” that’s ideal. The spray needs to be on 6 to 10 hours before a rain comes, and still longer is better.

In Iowa you can count on one spraying doing a good job of killing dandelion, common plantain, Rugel’s plantain, buckhorn plantain, bracted plantain, cocklebur, small ragweed, goldenrod, shoofly, bull thistle, burdock, ground ivy, catnip, shepherd’s purse, black medic, yellow sorrel, prickly lettuce and all mustards.

In addition to these weeds, one spraying will get such roadside and fence row pests as wild carrot, wild parsnip, five leaf ivy, wild grape and poison ivy. But we need at least another season to be sure how many sprayings it is going to take to knock out the deep-rooted perennials such as Canada thistle, bindweed (creeping jenny), horse nettle and sumac. Such lawn weeds as red sorrel and chickweed must be sprayed several times before they are killed. Any weeds that survive one treatment should be sprayed again.

White Clover, Other Legumes

White Dutch clover is severely injured by 2,4-D sprays. This will be good news to the golf enthusiasts and those who look upon white clover in lawns as a weed. However, to many people (probably most of them), killing white clover is unfortunate.

The plants are usually not completely killed but are severely injured. If the lawn is sprayed early the white clover may recover so that the plants will reseed. If spraying is done rather late, enough clover heads will probably have matured to assure reseeding. So if you want to keep white Dutch clover, spray either early or late. Of course, you can always buy a little seed and do the reseeding yourself.

One of the reasons most of us like a little white Dutch clover in the lawns is that it is a legume, and so it gathers nitrogen from the air which is fed to the roots of the lawn grass.

Spraying with 2,4-D will also kill other legumes such as soybeans, alfalfa, alsike, red and sweetclover, as it does white Dutch clover.

Precautions With 2,4-D

Until we know more about using 2,4-D sprays, here are some precautions that may be helpful:

1. If you have difficulty dissolving the 2,4-D compound in hard water, dissolve it in soft (cistern) water. In cities with softened water, there’s likely to be no trouble on this score. Also, if you dissolve it first in a little lukewarm (not hot) water and then mix it with the proper amount for your spraying, you are less likely to have difficulty.

2. If you are spraying a lawn or other spot where you don’t want to hurt the grass, spray only when the temperature is below 90 and preferably between 80 and 85. If the grass shows injury in 2 or 3 days, water thoroughly with a sprinkler.

3. Avoid “drift” of the spray to valuable shrubs, trees, ornamentals, vines or vegetables. Spray on a quiet day. Keep the sprayer nozzle close to the ground and turned away from the plants you want to protect. Only a tiny amount of spray may kill them. A low pressure knapsack sprayer is ideal for applying the material.

4. Use the material according to the directions on the package. Be sure to use the recommended amount of water. Cover the plants thoroughly to the extent of a light dew, but don’t put on so much that it runs off. Too much spray may hurt grass roots.

5. If you are going to use the same sprayer for 2,4-D that you use to spray for insect and disease control on garden or other plants, then make dead sure you do a good job of washing out the sprayer. This washing out may be done with kerosene, a baking soda solution (1 pound baking soda to 25
gallons of water) or with warm, soapy water. Thoroughly rinse with clear water several times after you have washed the sprayer out. The tank, hose, gaskets and nozzle need to be thoroughly cleaned. Valuable plants have been severely injured because of using a sprayer on them that’s had 2,4-D in it and hasn’t been well cleaned afterward.

Use Good Turf Program

Although you can get rid of dandelions and many other weeds on your lawn, pasture, golf course, etc., with 2,4-D sprays, they are not a substitute for good cultural practices. Use the spray along with but not for these other practices such as fertilizing, watering and mowing the grass high.

It is true that if you clean the weeds out of your lawn, golf course, roadside, ditch bank or fence row, it gives the grass a chance to thicken up. A heavy grass sod reduces the weed problem.

If you clean out the dandelions, wild lettuce and the like, it’s no assurance that they won’t be back with you. They can get a new start from the wind blowing in the seed. Then there is always danger of starting weeds from reseeding the lawn with impure seed mixtures or applying manure containing weed seed. Well rotted or composted manure is safest.

Building up a good turf is one way of holding your weed control problem to the minimum. It will do little good to get the weeds out unless you build up the stand of grass to the place where there is no room for weeds to come in.

How to Buy 2,4-D

You may be wondering how and where to buy 2,4-D—just what to ask for. There are several 2,4-D compounds now on the market and others are coming out. Here are a few of the trade names of those now available: Tufer, Scotts 4X, Salsbury’s Weed Kill, Burbank Weed Killer, Weed No More, Chipman 2-4-D Weed Killer, Weed Tox, Dow Weed Killer, Weedone, duPont Weed Killer, Weedicide, Concentrate No. 6 and Slay-Weed. Others that are not yet named will probably appear. Some are liquids, others are powders.

Some of these compounds should be available at almost any seed store, drug store or hardware store. Since the concentration varies, be sure to use it according to the directions on the package.

Don’t Confuse With Sinox

The 2,4-D compounds should not be confused with another chemical which has been used in California, Montana and North Dakota for killing mustard in grain and flax fields. This chemical is sodium-dinitro-orthocresylate. The trade name for it is Sinox. It’s an orange-colored, paste-like material, sold in 1- and 5-gallon sealed cans. The Dow Chemical Company also has a herbicide similar to Sinox. In our trials using this kind of chemical with seed onions, the results have been poor.

Young carrots in which weeds had so completely covered the plots that one could not see the rows were sprayed with regular furnace oil in August. The carrots were set back only slightly. No hand weeding was done. This spraying killed the annual weeds. These rows produced about three-fourths as large a crop as those receiving the usual hand cultivation. Kerosene was not as effective as furnace oil in killing the weeds. There was no kerosene or oil taste at harvest time in the treated carrots when eaten raw or cooked.

Below at the left is an experimental machine applying the weed killer to vegetable crops. So far it has not proven effective when used in this manner. The machine at right is used for applying 2,4-D to large areas such as golf courses. For treating lawns and other small areas, a common knapsack sprayer works well.