

# Herbicides as Aids in the Establishment of Grasses for Seed Production in Western Oregon

REX WARREN, *Extension Crops Specialist, Oregon State University*, and  
WILLIAM O. LEE, *Research Agronomist, Crops Research Division,  
Agricultural Research Service, U. S. Department of Agriculture*

Herbicides can be helpful in establishing grass stands for seed production in western Oregon. For maximum effectiveness in controlling germinating weeds without crop injury, however, recommendations must be followed carefully. Do not use herbicides as seedbed preparation aids on land subject to unusual water erosion during the winter months. Well-drained land is more responsive than wet land for chemical treatments and early seeding. Herbicides that can be used as seedbed-preparation aids are effective only on young seedlings. Usually, old plant crowns or roots will not be killed by the herbicides. Grass seed crops propagated vegetatively can be started in fields treated with the chemical seedbed herbicide.

## Necessary preplanting land preparation

Successful use of herbicides in establishing new plantings requires careful, well-timed land preparation. For best results summer fallow before seeding to destroy established perennial plants. Work the field immediately following crop harvest. Late-fall cultivation of the field to be seeded is necessary for good results. Late cultivation controls many early germinating weed plants that might be too large for later control by herbicides.

## Fall spraying

Spray fall-tilled fields in late November or December, after maximum germination of weed plants. Promising chemicals are isopropyl *N*-phenylcarbamate (IPC) plus 2,4-dichlorophenoxyacetic acid (2,4-D); and 1,1'-dimethyl-4,4' dipyridylium salt (paraquat). If paraquat is used, apply it with rear-mounted spray equipment to avoid inactivation of the herbicides in the wheel tracks. IPC is recommended at 4 pounds plus 1 pound of 2,4-D per acre. Amine or ester formulations may be used. The amine forms usually are more compatible with the different IPC formulations. When ester formulations of 2,4-D are used, we suggest mixing small samples with IPC to test compatibility and avoid possible spray-mixture problems in the sprayer. IPC should be applied at least 6 weeks before planting, preferably during late November or December.

Paraquat at  $\frac{1}{2}$  pound (1 quart) per acre has been most effective when applied in December. This herbicide is rapidly deactivated in the soil and does not show residual activity. IPC usually possesses residual activity in most soils for 10 to 60 days, depending on moisture, temperature, and other factors.

## Seeding

Seed the fields between February 15 and March 15. Drilling is preferable to broadcast seeding. However, airplane seeding may be necessary on wet lands. Do not till the field between the time of spraying and seeding.

## Sprays at seeding time

A second application of paraquat at  $\frac{1}{2}$  pound per acre at planting time has increased weed control where germination has occurred following November or December application with either IPC plus 2,4-D or paraquat. Paraquat can be applied either before seeding or, if the seed is well covered, after seeding. Do not apply paraquat after the seeded crops emerge or all exposed plants will be killed.

## Summer and fall care of field

Some spring-germinating broadleaf weeds will appear in seed fields. They can be controlled with 2,4-D or combinations of 2,4-D and 2-methoxy-3, 6-dichlorobenzoic acid (dicamba\*). Do not apply these herbicides until the seeded crop has five or more leaves (usually about 8 weeks after emergence). The recommended rate of 2,4-D is  $\frac{1}{2}$  pound per acre. If sheep sorrel or dog fennel are growing in the field,  $\frac{1}{4}$  pound of dicamba should be added to the 2,4-D spray. Well-established, early spring seedings of bluegrass, Astoria bentgrass, Highland bentgrass, orchardgrass, or tall fescue can be sprayed with 2 pounds of 3-(3,4-dichlorophenyl)-1, 1-dimethylurea (diuron†) in October or November. These sprays will control weed grass seedlings.

\* Sold as Banvel D.

† Sold as Karmex.



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## How to Use Herbicides as Seedbed-Preparation Aids

1. Summer fallow or plow after harvest in order to eliminate established perennial plants.
2. Cultivate as late as possible in the fall.
3. Apply the first herbicide treatment in November or December.
4. Seed grass-seed crops between February 15 and March 15.
5. Apply paraquat treatment at seeding time, or before the crop seedlings emerge if additional weeds have germinated.
6. Apply selective summer sprays of 2,4-D or combinations of 2,4-D and dicamba when grass seedlings are approximately 8 weeks old.
7. Apply fall diuron spray at the rate of 2 pounds per acre on well-established Astoria and Highland bentgrass, tall fescue, orchardgrass, or bluegrass varieties.

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