Weed seeds and unwanted crop seeds are serious contaminants in many seed lots. The seed grower’s first responsibility is to plant clean seed on clean land. Seed fields, even though seeded with clean seed on clean land, will have some weeds. Field removal of weeds with herbicides and roguing is easier, more complete, and less expensive than removal by cleaning equipment.

There are numerous herbicides that do a good job controlling most weed pests. Herbicides such as diuron (Karmex), simazine (Princep), atrazine (AATrex), and prometryne (Caparol), when properly used, control most annual weeds. IPC and CIPC control annual grasses. Dicamba (Banvel) controls seedling grasses under some conditions, as well as annual and perennial broadleaved weeds. Choice of herbicide, time of spraying, rate of spraying, soil moisture, and method of application spell success or failure.

Diuron, simazine, atrazine, and prometryne must be applied when the weeds to be killed are in the seedling stage of growth. At selective rates, these chemicals do not kill established plants, even annuals. Timing is very important for IPC and CIPC; they must be applied when the weather is cool and the soil moist. These chemicals, when applied later than the dates indicated on the attached spray table, can prevent heading of the seed crop the following year. Dicamba is excellent for the control of sheep sorrel and dock after new leaves have developed.

Straw and chaff from harvested crops reduce the effectiveness of all herbicides. Straw should be removed by burning or by mechanical means. Carbon from burned straw reduces the effectiveness of diuron, simazine, atrazine, and prometryne. When all straw and chaff are not consumed by the fire, then some cultural practice, such as harrowing, to spread and break up the straw mat will improve weed control.

It is advisable, when possible, to alternate the use of herbicides each year. Such changes help prevent build-up of certain herbicide-tolerant plants. Alternate uses also reduce possibilities of build-up of toxic residues.

2,4-D, dicamba, and combinations of 2,4-D and dicamba will effectively control most broadleaved plants. Bromoxynil can be applied on seedling grasses in the 2-3 leaf stage. 2,4-D, dicamba or mixtures of 2,4-D and dicamba should not be used before the grass seedlings are four to six weeks old. Established grass seed fields should not be sprayed when the seed heads are in the boot or heading stage of development.

Several of the herbicides mentioned are soil sterilant at higher rates of application. Thus it is essential that spray equipment be properly calibrated and operated to apply the proper amount of herbicide. Exceeding the recommended rate can result in severe crop-plant injury and seed yield reduction. Avoid overlapping, which doubles the rate of application on the overlap areas. To get more uniform spray coverage, mix the spray solution at one-half concentration and spray twice; much less damage results from overlap, and there is less chance of untreated skips.

All herbicides need uniform applications. Soil-applied herbicides demand more uniform coverage than most foliage-applied herbicides. Diuron, simazine, atrazine, prometryne, IPC, and CIPC sprays are usually applied more uniformly with ground equipment than by aircraft. This will vary with the carefulness of the applicator.

Diuron, simazine, atrazine, and prometryne are wettable powders. Good agitation is needed for even spraying. Spray nozzles used for wettable powders must be checked regularly for wear. Experimental studies show that nozzles applying wettable powders will wear with 30 hours use, enough to increase spray rates 20 percent.

Chemicals used at selective rates will not control established perennial plants such as quackgrass, velvetgrass, or tall fescue. Such plants require special spot spraying or mechanical removal.

**Herbicides as Aids in Grass Stand Establishment in Western Oregon**

IPC and 2,4-D, or paraquat, when properly used, aid in the establishment of new grass seed fields. These chemicals make it possible to control seedling grass and broadleaved plants which compete with grass seedlings for plant food and moisture. With proper spraying, the first seed crop can meet top quality seed requirements.

The field to be seeded should be summer fallowed or summer worked immediately after harvest of the annual crop. Continue tillage into the fall as late as the weather permits. Tillage controls perennial plants and encourages germination of soil-borne weed and crop seeds.

The first spray, IPC and 2,4-D, or paraquat, is applied late in November or early December. The second spray, paraquat, is applied at seeding time or shortly after seeding if the seed is covered (usually about February 15 to March 15). The field should not be tilled after spraying and before seeding. IPC should be applied six to eight weeks before the grass is seeded. Rear-mounted spray booms are recommended for spraying paraquat. Use wetting agents recommended on the paraquat label. Follow safety recommendations on paraquat as listed on the label.

The new grass field should be sprayed with 2,4-D or 2,4-D and dicamba during the summer. This spray controls broadleaved weed seedlings. Diuron at two pounds per acre is recommended for application in November on well established bluegrass, orchardgrass, or tall fescue. Fall sprays control fall-emerging weeds and crop seedlings.

Prepared by Rex Warren, Extension Farm Crops Specialist, Oregon State University, Corvallis.
# Oregon Weed Control Recommendations for Grass Seed Crops—1970

**Crops** | **Chemical** | **Rate per acre and carrier** | **Remarks**
--- | --- | --- | ---
**STATEWIDE**
Grass (all grasses) | 2,4-D | \( \frac{1}{2} \) to \( \frac{1}{2} \) lb in 10 to 20 gals of water. | For the control of broadleaved weeds. Spray before the boot stage of the seed crop. New seedlings should have 4 to 5 leaves before spraying (3 to 6 weeks old).
| bromoxynil | \( \frac{1}{2} \) to \( \frac{1}{2} \) lb. | Bromoxynil can be applied when grass seedlings are in the 2-3 leaf stage.
| dicamba (Banvel) and dicamba plus 2,4-D | \( \frac{1}{2} \) lb. of dicamba in 10-20 gals. of water or \( \frac{1}{2} \) to \( \frac{1}{2} \) lb. of 2,4-D and \( \frac{1}{2} \) lb. of dicamba. | For sheep sorrel control, spray from November to April. Sheep sorrel should have new leaf growth when sprayed. Combination controls some weeds not controlled by 2,4-D or dicamba singly. Do not use on new grass seedlings before the 4-5 leaf stage.

**WESTERN OREGON**
Perennial ryegrass | CIPC | 2 lbs. in 10-20 gals. of water by ground. | IPC or CIPC should not be used on fields less than 16-17 months old. Fall-seeded fields should not be sprayed the following fall. Spray before October 31.
| IPC | 3 lbs. in 10-20 gals. of water by ground. | Spray after fall rains have started. Good agitation is needed.
| atrazine | \( \frac{1}{2} \) lbs. in 10-20 gals. of water by ground. | Spray in early fall when weed seedlings are small. Spray after the first seed harvest. Do not graze fields within 10 days of spraying. Do not use more than two consecutive years. Does not control wild garlic.

| Highland, Exeter, and Astoria bentgrass | IPC | 4 lbs. in 10-20 gals. of water by ground. | Spray IPC and CIPC in October for annual grasses. Spray established fields only. Spray before October 31.
| CIPC | 3 lbs. in 10-20 gals. of water by ground. | Spray early when seedlings are small. Do not pasture sprayed fields for 30 days after application. Use 4-lb. rate following heavy burning. Spray when weed seedlings are small (Sept. 15 to Nov. 15). Bent-grasses are not as tolerant of diuron as orchardgrass or bluegrass.
| simazine | \( \frac{2}{3} \) lbs. per acre in 10-20 gals. of water by ground. | Spray before Nov. 1. Do not spray fields before the first seed harvest. More effective than diuron on ripgut brome and wild oats. Not effective for controlling annual bluegrass.
| diuron | 2 to 3 lbs. in 10-20 gals. of water by ground. | Spray after first rain when weed seedlings are small. Use 2 lbs. on well-established seedling stands. Heavy rates will damage stands on wet lands.

| Kentucky bluegrass varieties | IPC or CIPC | 3 lbs. in 10-20 gals. of water by ground. | Spray after first rain when weed seedlings are small. Use 2 lbs. of diuron will help control annual bluegrass not controlled with fall applications. January 1 to Feb. 15. Do not use before the first harvested crop. Spray before Oct. 31. Do not use more than 2 lbs. on new stands.
| diuron | 2 to 4 lbs. in 10-20 gals. of water by ground. | Do not pasture fields for 30 days after spraying with simazine. Spray after first fall rains. Better wild oat and ripgut brome control than from diuron sprays.

| Tall fescue (Alta and Fawn) | IPC or CIPC | 3 lbs. in 10-20 gals. of water by ground. | Spray after first rain when weeds are small. Use 4-lb. rate following burning. Do not use more than 2 lbs. on new stands.
| diuron | 2 to 4 lbs. in 10-20 gals. of water by ground. | Do not pasture for 30 days after spraying with simazine. Spray after first fall rains. Better wild oat and ripgut brome control than from diuron sprays.
| simazine | \( \frac{2}{3} \) lbs. of product in 10-20 gals. of water by ground. | Do not spray fine fescue fields before the first seed harvest with IPC or CIPC. Spray after first rain and before October 20.

| Orchardgrass | IPC or CIPC | 3 lbs. in 10-20 gals. of water by ground. | Spray after first rain when weeds are small. Use 4-lb. rate following burning. Do not use more than 2 lbs. on new stands.
| diuron | 2 to 4 lbs. per acre in 10-20 gals. of water by ground. | Do not pasture fields for 30 days after spraying with simazine. Spray soon after first fall rains.
| simazine | \( \frac{2}{3} \) lbs. product in 10-20 gals. of water by ground. | Do not spray fine fescue fields before the first seed harvest with IPC or CIPC. Spray after the first rain and before October 20.

| Chewings fescue or creeping red fescue | CIPC | 2 lbs. in 10-20 gals. of water by ground. | Spray soon after the first fall rains when weed seedlings are small. Do not spray before the first seed harvest. Do not pasture for 30 days. Do not use more than two consecutive years.
<p>| simazine | ( \frac{2}{3} ) lbs. of product in 10-20 gals. of water by ground. |</p>
<table>
<thead>
<tr>
<th>Crops</th>
<th>Chemical</th>
<th>Rate per acre and carrier</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EASTERN OREGON</strong>&lt;br&gt;Cheewing fescue, creeping red fescue, Kentucky bluegrass varieties</td>
<td>dicamba</td>
<td>3 lbs. (3 qts.) in 10-20 gals. of water by ground.</td>
<td>Controls downy brome (Cheatgrass) and rattail fescue. Spray within 10 days of first fall irrigation when soil is still damp. Spray after first seed harvest. Fields should be burned. Unburned straw should be scattered with a harrow or other tillage implement before spraying. Spray within 10 days of first fall irrigation when soil is still damp. Spray after first seed harvest. Fields should be burned. Unburned straw should be scattered with a harrow or other tillage implement before spraying.</td>
</tr>
<tr>
<td>Bluegrass varieties</td>
<td>prometryne</td>
<td>3½ to 4 lbs. of product in 10-20 gals. of water per acre.</td>
<td>Controls seedling grasses such as downy brome. Fields should be burned prior to spraying. Use only on fields after at least one crop harvest. Do not pasture sprayed fields or feed sprayed straw.</td>
</tr>
<tr>
<td><strong>CHEMICAL SEEDBED</strong>&lt;br&gt;FOR WESTERN OREGON</td>
<td>IPC plus 2,4-D or ½ paraquat</td>
<td>4 lbs. of IPC plus 1 lb. of 2,4-D with 10-20 gals. of water, at least 5 gals. by air.</td>
<td>Controls only seedling plants. Apply in late November or early December.</td>
</tr>
<tr>
<td></td>
<td>paraquat</td>
<td>½ lb. in 10-20 gals. of water, at least 5 gals. by air.</td>
<td>Respray in February or March with ½ lb. per acre of paraquat. Paraquat can be applied before or after seeding. Be sure seed is well covered before spraying. Spray before seeded crop emerges. Use rear-mounted spray boom. Controls only seedling plants. Use wetting agents according to label on paraquat. Seeded crops should have 4 to 5 leaves (about 6 weeks old) before spraying.</td>
</tr>
<tr>
<td></td>
<td>2,4-D or 2,4-D plus dicamba</td>
<td>½ to ¾ lb. of 2,4-D in 10-20 gals. of water, or ½ lb. of 2,4-D plus ½ lb. of dicamba in 10-20 gals. of water, at least 5 gals. by air.</td>
<td>Spray in October and November on well established stands of bluegrass, tall fescue, and orchardgrass.</td>
</tr>
<tr>
<td></td>
<td>diruon</td>
<td>2 lbs. of product in 10-20 gals. of water by ground.</td>
<td></td>
</tr>
</tbody>
</table>