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Agricultural Experiment Station
Oregon State College
Corvallis

The Field Is the Best Place to "Clean" Weed Seeds From a Grass Seed Crop

Weed control is one of the grass seed farmer's largest costs. The best place to clean undesirable weed seeds from a seed crop is in the field. In the past few years a number of chemical weed killers have been found selective for the control of major weeds in grass seed crops.

Controls

Broad-leaved Weeds in Established Stands

A large number of perennial and annual broad-leaved weeds are found in nearly all grass seed stands. The chemical 2,4-D is effective on most broad-leaved species, both annual and perennial. Just before seed forms in the spring is the best time to get maximum control of the broad-leaved weeds without injuring the crop. Established stands of grass seed crops can be sprayed then with $\frac{1}{2}$ pound of 2,4-D. Control of perennials such as Canada thistle, wild morning-glory, and similar deep-rooted weeds requires a higher rate. One pound of 2,4-D is suggested for the control of these hard-to-kill species.

Although 2,4-D is the most widely used of the hormone weed killers for broad-leaved weeds, MCP or 2,4,5-T can control certain weeds better. 2,4,5-T will better control legumes such as clovers, wild pea, and lupine. Just add 2,4,5-T in a 50-50 mixture with 2,4-D. MCP alone has given indication of being more effective on sheep sorrel, horsetail, and bur chervil.

Broad-leaved Weeds in New Seedlings

Broad-leaved weeds often are a serious problem in establishing new stands. The same herbicides used for weed control in established stands can be used on seedlings after the grass has started to stool. To avoid injury to the young seedlings, spray with $\frac{1}{2}$ pound per acre after grass has two or three shoots. 2,4,5-T or MCP can be used at the same rate as suggested for 2,4-D on the weeds listed above.

Weedy Grasses

Controlling weedy annual grasses is one of the grass seed grower's major problems. Such weed seeds cannot be cleaned easily from the seed crop. IPC and Chloro IPC have been widely used in the fall for controlling most weedy annual grasses in western Oregon. Both of these materials should be applied during the month of

October, and in all cases applied before November 1 with the exception of Chewings fescue and red fescue. With these grasses apply no later than October 20. Alta fescue may be treated with either Chloro IPC or IPC at 3 pounds per acre. Chloro IPC has given the most satisfactory results. Regular IPC at the rate of 3 pounds per acre should be used for spraying Chewings or creeping red fescue. Chewings fescue is the most sensitive to IPC. Be sure that not more than 3 pounds per acre are applied and that application is completed in early October. Chloro IPC at 4 pounds per acre will control silver hairgrass and similar weedy annuals in bentgrass. IPC and Chloro IPC should be used only on well established grass stands that have finished their first year of seed production. Spraying new seedlings in the fall usually will result in severe injury to the stand and loss of the first year's seed crop.

Recent research has shown that a new material named Karmex DW gives better control of weedy annual grasses with less chance of injury to the seed crop. This material is being introduced experimentally for grower trial on established stands of Alta fescue, red fescue, Merion bluegrass, and bentgrass. Apply at the

rate of 2 pounds per acre of the product as it comes from the container. Apply during October. This material is a wettable powder and requires constant mechanical agitation to prevent it from settling. If your sprayer does not have a mechanical agitator do not use this material. Injury may result. With Karmex DW, use at least 30 gallons of water per acre.

Make sure you get Karmex DW rather than Karmex W. These materials are similar, but Karmex DW injures the grass seed crops much less. Karmex DW has an advantage over IPC, because it controls annual broad-leaved weeds as well as weedy annual grasses. This material has a long residual life. It will usually control weeds throughout the winter and early spring.

Karmex DW is a new material that will be labeled for use on these crops in western Oregon only on a trial basis. Application for clearance has been made under the "Miller Amendment" that regulates the use of agricultural chemicals. Clearance is still pending. This material is relatively nontoxic to humans and animals, but until cleared by the Food and Drug Administration, it should not be used where the crop residue will be fed to livestock.

Chemical Weed Control Chart

Chemical	Grass Seed Crop	Weed Controlled	Rate/Acre	Time of Application	Remarks
2,4-D	All	Most broadleaf types	$\frac{1}{2}$ to 1 lb.	After seedlings stool, or before seed heads form.	Use amine or low volatile esters.
MCP	All	Broadleaves, especially horsetail, bur chervil and sheep sorrel.	Same as above.	Same as above.	Use same precautions as with 2,4-D.
2,4,5-T	All	Broadleaves, especially legumes; clovers, lupine, and wild pea.	Same as above.	Same as above.	Mix 50-50 with 2,4-D.
Chloro IPC	Bentgrass Alta fescue	Germinating annual grasses.	3 to 4 lbs.	October.	Apply before November 1. May injure fine fescues.
IPC	Bentgrass Alta fescue Creeping fescue Chewings fescue	Same as above.	Same as above.	Same as above.	Use on creeping red fescue and Chewings fescue before October 20.
Karmex DW	Bentgrass Alta fescue Creeping fescue Merion bluegrass	Germinating grasses and broadleaves. Velvet grass.	2 or 4 lbs.*	Same as above.	Must have good mechanical agitation in sprayer.

* Four pounds of Karmex DW for velvet grass control in bentgrass.

Common Velvet Grass (Mesquite)

Karmex DW can control this weed when applied at the rate of 4 pounds per acre of product as it comes from the container. Apply in October. This treatment may turn the crop brown for a short period, but it will recover by late winter.

Karmex DW treatment of fields infested with velvet grass should be limited to bentgrass and Alta fescue. Use on red fescue and Chewings fescue should be limited to fields in which velvet grass is so severe that killing the weed would be the only way of obtaining satisfactory seed production. The 4-pound rate of Karmex DW required for velvet grass control may cause some yield reduction in these latter two crops.

Other Perennial Grasses

Other perennial, grass-type weeds are not readily controlled by selective treatment. The only practical method at present is through tillage or hand digging. Growers report the use of spot treatment of unwanted perennial grass plants with chemicals has been successful. Material used for this purpose has been Karmex W (CMU) applied with a pack sack sprayer using 1 pound of the chemical to each 3 gallons of water, spraying to saturate the crown on the perennial weedy grass. Other materials such as Dalapon are under study for this purpose.

Karmex DW on New Seedlings

Preliminary research has indicated that the 2-pound rate of Karmex DW can be used safely on well-established seedling year stands of Alta fescue and Merion bluegrass. Injury has resulted to the seedlings of other species from this treatment. Limit treatment to only those stands that were spring planted and well established. Apply in October, the same as for established stands.

Precautions

2,4-D, 2,4,5-T, and MCP will injure many plants such as clover, shrubbery, and flowers if small quantities drift on these sensitive plants. To avoid injury, follow the recommended rate and manufacturers' precautions. These materials come in several forms. The most common are amine salts, standard esters, and low volatile esters. Use amine salt and low volatile esters if nearby crops might be injured from drifting *vapors* during hot weather. However, drift of amine salts or low volatile ester *droplets* will damage sensitive crops.

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