

# Weed Control in Small Grains

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MCPA, 2,4-D, dicamba (Banvel D), combinations of 2,4-D and dicamba, diuron (Karmex), bromoxynil (Buctryl and Bromonil), barban (Carbyne), diallate (Avadex), and triallate (Avadex BW), are registered for the control of weeds under certain conditions in Oregon's small grain crops.

Good weed control in small grain crops requires proper selection of herbicides and proper timing of application as to stage of growth of the weeds and the grain. Care must be exercised to obtain good coverage. Overuse of herbicides often damages cereal crops.

Care must be used with all herbicides. Some herbicides can damage adjacent crops, some volatilize under certain conditions, and all herbicides drift. Follow carefully the instructions on the label for safe use.

MCPA, 2,4-D, dicamba, and combinations of these chemicals should be applied when the winter grains are well established (at least in the five-leaf stage of growth) and when spring grains are 6 to 8 inches tall. The weeds to be controlled should be small. Sprays should be applied before flower buds start to appear.

The chemical 2,4-D is preferred over MCPA when selectively spraying wild garlic and Canada thistle. MCPA is recommended when the grain crops are underseeded to legumes. MCPA is better for the control of burchurvil, a weed common in some areas, and also is safer to use on oats than 2,4-D is. Dicamba is more effective than 2,4-D or MCPA for the control of knotweed, corn cockle, cow herb, wild peas, lupines, garlic, and Canada thistle.

Diuron, at rates of 1 to 2 pounds per acre, is excellent for the control of annual ryegrass and broadleaved weeds in western and eastern Oregon. Generally speaking, pre-emergent application of the spray is preferred over applications after the grain emerges. Post-emergent sprays, when used, should be applied within six weeks of the emergence of the grain. One pound of diuron is effective for controlling broadleaved weeds east of the Cascade Mountains. Diuron should not be used at rates in excess of one pound (80% product) in areas with rainfall less than 16 inches. Variable results have been obtained with diuron in areas with 12 inches or less of rainfall. Diuron is a wettable powder and must be applied with equipment with good agitation. Mechanical agitation is preferred over bypass agitation. Spray nozzles should be checked regularly for accuracy when wettable powders are used.

Lorox (linuron), a new herbicide similar to diuron, has shown good control of broadleaved weeds in areas

of less than 20 inches of rainfall. Registration for use of linuron is expected in the fall of 1966. Linuron should not be used until registration has been officially announced.

Bromoxynil, one of the newer herbicides, is safer to use on seedling grains than are 2,4-D, MCPA, or dicamba. Best results have been obtained if bromoxynil is applied when the weeds are in the seedling stage of growth. Ten or more gallons of water per acre are suggested spray volumes for bromoxynil. Higher volumes of water (15-30 gallons) are needed when controlling older weeds, especially during droughty weather. Blue mustard and gromwell are readily controlled with bromoxynil. Tansy mustard, false flax, jagged chickweed, ivy-leaved speedwell, filaree, and bushy mentzelia are more resistant to bromoxynil.

Barban is effective for the control of wild oats and annual ryegrass in winter wheat and for wild oat control in spring wheat and barley. Barban should be applied when the wild oats are in the two-leaf stage of growth. Wheat or barley should not be applied past the four-leaf stage of growth. For annual ryegrass control, barban should be applied when the ryegrass is in the seedling stage of growth. Usually this is 15-30 days after preparing the seedbed for wheat or barley. Wheat or barley can be damaged when sprayed with barban later than the four-leaf stage of growth. Do not use more than 5 gallons of water per acre when spraying barban.

Diallate and triallate are used to control wild oats in spring barley and spring wheat. These chemicals are applied after the seedbed has been prepared, but before the wheat and barley are seeded. Diallate and triallate herbicides are applied to the soil surface and disced into the soil immediately after application.

Combinations of amitrole (Cytrol, Amitrole T, Amino Triazole, or Weedazol) and 2,4-D, or amitrole and atrazine, are effective for controlling cheatgrass in stubble fields. These chemicals are applied in the fall and early spring to fields that have been previously harvested, but in most cases not tilled. These chemicals control the cheatgrass growth during the winter months. The sprayed fields are tilled the following spring with regular summer fallow equipment. The advantages of this treatment are easier control of cheatgrass and the prevention of cheatgrass seeding before the completion of the summer fallow operations. Winter fallow sprays, when not used on large fields, should be considered for use on field borders. These borders are sources of the spread of cheatgrass into adjacent grain fields.



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## Recommendations for Weed Control in Small Grains

Crop	Chemical	Rate	Time of application	Remarks
		lbs./A		
<b>WHEAT</b>				
Winter or spring	2,4-D	½ to 1	Winter wheat: after 5-leaf stage Spring wheat: 6-8 inches, before boot stage	Use 5 to 20 gals. of water per acre. Use ester formulations on hard-to-kill weeds. Not recommended when the grain is underseeded to legumes.
Winter or spring	MCPA	½ to 1	Winter wheat: after 5-leaf stage Spring wheat: 6-8 inches, before boot stage	Use 5 to 20 gals. of water per acre. Use light rate when wheat is underseeded to legumes.
Winter or spring	2,4-D plus dicamba	½ to ¾ ½	Winter wheat: after 5-leaf stage Spring wheat: at least 6-8 inches tall	Use 5 to 20 gals. of water per acre. Controls mixed weed species such as tarweed, purple mustard, corn cockle, and western gromwell.
Winter or spring	Dicamba	¾	Winter wheat: after 5-leaf stage Spring wheat: 6-8 inches tall	Use 5 to 20 gals. of water per acre. Controls corn cockle, knotweed, dock, sheep sorrel.
Winter or spring	Bromoxynil	.4-.5 (1½ to 2 pts.)	When weeds are small	Use 10 to 20 gals. of water per acre. Apply when weeds are in seedling stage. Use higher rate when weeds are older.
Winter wheat	Diuron	1 to 2 (80% product)	From planting time to 6 weeks after emergence	Use equipment with good agitation. Use 2 lbs. in western Oregon and 1 lb. in eastern Oregon. Use the lighter rates on light soil. Diuron use is questionable in areas with less than 12 inches of moisture.
Winter or spring	Barban	¾	Two-leaf stage of wild oats, 3 weeks after seeding wheat for ryegrass control.	Do not use more than 5 gals. of water per acre. Do not spray when wheat has more than 4 leaves.
Spring wheat	Triallate	1	Preplant and incorporate	Double harrow spray into the seedbed prior to seeding. Drill wheat 3 inches deep.
Winter fallow (stubble)	Amitrole plus	1	Oct. 10 to April 30	Use 10 or more gals. by ground and 5 or more by air. When planting spring grain, spray at least 3 weeks prior to seeding. Work summer fallow when new weeds start growth (not a residual spray).
Winter or spring wheat	2,4-D ester	1	After weeds have germinated in fallow; before weeds are 6 inches tall	
Winter or spring wheat	Atrazine plus amitrole	.4 ½ to 1	From Oct. to Jan. 1 After weeds have germinated in the stubble	Apply only with ground equipment with mechanical agitator and good sprayer markers. Do not use on shallow soils cleared only for winter wheat. Do not seed for 9 months following spraying. Work summer fallow when weed growth starts (April).
<b>BARLEY</b>				
Winter barley	Diuron	1 to 2 (80% product)	Pre-emergence	Use mechanical agitation. Use lighter rates on sandy soil.
Winter barley	Bromoxynil	.4 to .5 (1½ to 2 pts.)	When weeds are small	Use 10 to 20 gals. of water per acre. Use higher rates when weeds are older.
Winter and spring	2,4-D or MCPA	½ to 1	Winter barley: 5-leaf stage Spring barley: 6-8 inches tall, but before boot stage	Use 5 to 20 gals. of water per acre. Use ester formulations on hard-to-kill weeds. Use 1 to 1½ lbs. when spraying to control Canada thistle.
Winter and spring	MCPA or 2,4-DB	¾ to ½ 1 to 1½	Winter barley: 5-leaf stage Spring barley: 6-8 inches tall, but before boot stage	Use when barley is underseeded to legumes. Spray after legumes reach the 2-leaf stage. Use MCPA sprays when barley is old enough to provide cover for the legume seedlings.
Spring barley	Barban	¾	Two-leaf stage of wild oats	Spray when wild oats are in the 2-leaf stage. The barley should not be past the 4-leaf stage. Use 5 gals. of water per acre.
Spring barley	Diallate	1 to 1½	Before planting	Incorporate 2 inches deep the same day as sprayed. Use 5 or more gals. of water per acre. Do not graze sprayed fields.
Spring barley	Triallate	1 to 1½	Before planting	Incorporate 2 inches deep, preferably with a disc, the same day as application. Do not graze sprayed fields.
<b>OATS</b>				
Winter or spring	2,4-D or MCPA	½ to ¾	Winter oats: 5-leaf stage Spring oats: 6-10 inches tall, but before boot stage	Use 5 to 20 gals. of water per acre. Amine 2,4-D or MCPA are safer to use on oats than ester formulations.
Winter or spring	MCPA or 2,4-DB	¾ to ½ 1	Winter oats: 5-leaf stage Spring oats: 6-10 inches tall, but before boot stage	Use when the oats are underseeded to legumes. Spray when the legume is in the 2 or more leaf stage and before oats are in the boot stage. Delay spraying with MCPA until the oat growth gives good coverage of the legume.
Winter or spring	Diuron	1½ to 2	Pre-emergence	Use mechanical agitation. Use light rate on spring planted oats.