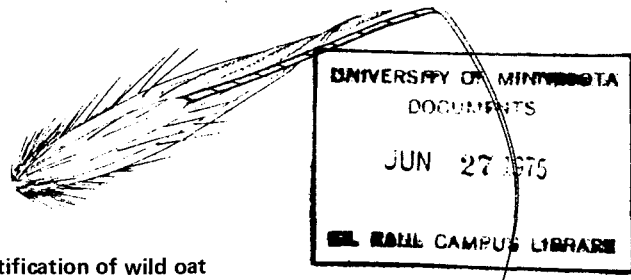


④ AGRICULTURAL CHEMICALS NO. 9-1975
OLIVER E. STRAND

Wild Oat Identification And Control



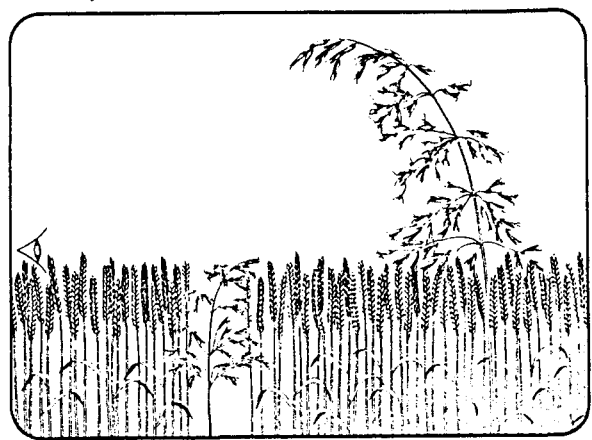
Identification of wild oat

Wild oat is a competitive annual weed that grows from seed. A member of the grass family, wild oat usually germinates when temperatures are cool in early spring or in late fall. Very little wild oat seed germinates during June through September. Wild oat has dormancy characteristics that prevent germination until the seed is fully mature. Germination is often delayed for more than 1 year. However, wild oat seed usually germinates within 3 years unless it is buried deeply into the soil where it can remain dormant for years.

The delayed germination characteristic of wild oat, its habit of shattering its seed before most crops are harvested, and its similarity in growth habit to the cereal grains have often resulted in severe infestations of wild oat among cereal grains.

It's easy to identify mature wild oat in most crops. The inflorescence (head) of a mature wild oat plant is a spreading, open panicle that often droops over in contrast to the more compact and erect inflorescence of cultivated oats (figure 1).

Figure 1. Mature wild oat in wheat usually overtops the crop and is easily identified



However, identification of wild oat seedlings is more difficult. Nevertheless, it's important because effective chemical control can be initiated in most crops if wild oat is identified in the two-leaf stage. Wild oat seedlings may be identified if seedlings are carefully dug up so that seed, roots, and leaves are intact. Wild oat seedlings have these vegetative characteristics (figure 2):

- ** Elongation of the first internode. Wild oat seed can readily emerge from varying depths in the soil because of this characteristic. The distance between the seed, with its seminal (seed) roots, and the crown roots, located just under the soil surface, depends on the depth of emergence.
- ** Open-leaf sheath with overlapping margins.
- ** Prominent membranous ligule, often ragged on top.
- ** No auricles.
- ** Basal margin of leaf blade often has stiff, prominent hairs.
- ** The leaf blades of grasses have a characteristic twist or spiral turn (as you look down on them from above). The leaf twist of wild oat is counterclockwise. Barley and wheat leaves twist clockwise. Cultivated oats also have a counterclockwise twist to the leaves (figure 3).
- ** Wild oat seed has lemma and palea (hulls) attached to the caryopsis (grain), with a twisted and bent awn (beard) arising from the back of the lemma. The seed has prominent hairs at the base (point of attachment) and is yellow-brown to brownish-black. However, the awns and hairs may be partially or entirely broken off after being buried in the soil. Many of the seeds have a prominent oval depression at the base, often called a "sucker mouth."

Figure 2. Wild oat seedling and vegetative characteristics

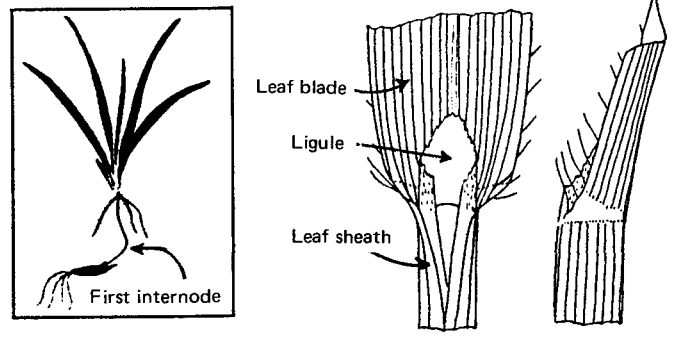


Figure 3. Counterclockwise twist of wild oat leaves

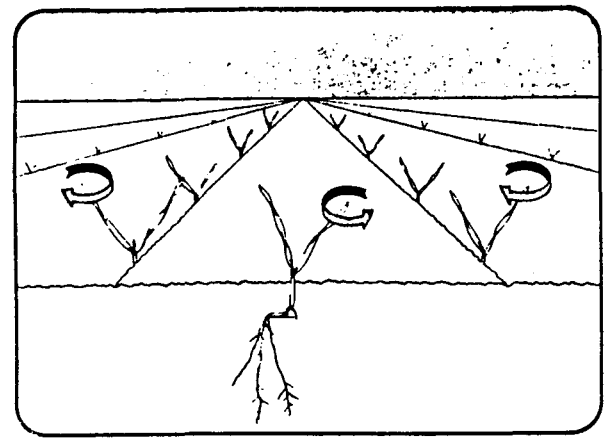
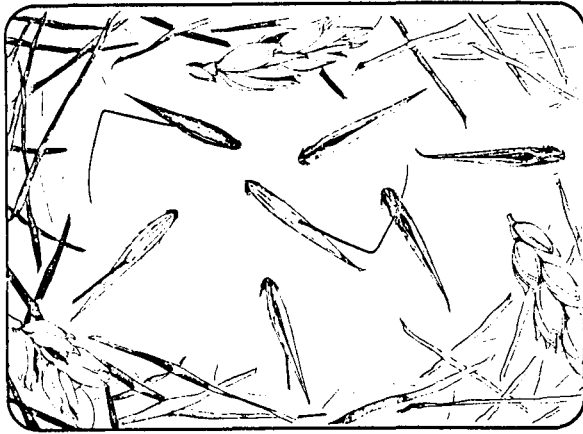


Figure 4. Wild oat seed on soil surface after harvest



Wild oat control

Wild oat is competitive with most crops. Uncontrolled, it may reduce crop yields by one-third or more. A combination of cultural and chemical practices are usually needed to control wild oat.

Cultural control

** Cultivate shallowly as soon as the soil is workable in early spring to break the soil crust, covering the wild oat seed to stimulate early germination. Wild oat lying on the soil sur-

face in the fall is exposed to weathering (figure 4). These exposed seeds have a shorter dormancy period than those worked into the soil in the fall. Therefore, avoid fall tillage if wild oat is a problem. Repeat shallow cultivation as needed to kill wild oat plants that have germinated. Plant wheat, barley, or flax within 1 to 2 weeks of normal planting time to avoid excessive loss of crop yields. Chemical control is usually necessary in addition to limited tillage.

- ** Shallow tillage may be repeated several times in the spring to control wild oat. Delay planting the crop until wild oat seed becomes dormant, about mid-June. Then plant a crop adapted to late sowing, such as early varieties of flax, corn, proso millet, buckwheat, sudangrass, and soybeans. Use fertilizer and heavy seeding rates to provide additional crop competition.
- ** Harrowing a few days after the spring-sown crop has germinated and before it is up can considerably reduce early germinating wild oat stands. If soil conditions are dry, harrowing may also be done after small grains and most row crops are up. However, harrowing should be done before small grain begins to tiller or stool. Do not harrow flax.
- ** Cultivated oats may be planted early in the season on fields badly infested with wild oat. The crop may then be cut for hay or silage before wild oat seed matures.
- ** Plant crop seed of an adapted variety that is free of wild oat seed.

Chemical control

Earlier seeding of wheat or barley and the use of an herbicide to control wild oat is usually more profitable than is delayed seeding or planting alternative crops.

Table 1. Chemicals for wild oat control in field crops

Crop	Chemicals	Pounds active ingredient/A	Time of application	Environmental Protection Agency limitations on use
Spring or durum wheat	triallate (Far-go, Avadex-BW)	1 (liquid) 1 1/4 (granules)	Incorporate after planting but before emergence in spring or apply in fall within 2 to 3 weeks of soil freezeup and incorporate into soil.	Do not graze livestock on treated areas.
	barban (Carbyne)	1/4 to 3/8	When wild oat is in two-leaf stage. Do not apply after four-leaf stage of wheat nor more than 14 days after wheat emergence.	Do not graze treated fields until after harvest.
Barley	triallate	1 1/4 (liquid) 1 1/2 (granules)	Incorporate before planting or emergence in spring, or apply in fall within 2 to 3 weeks of soil freezeup and incorporate into soil.	Do not graze livestock on treated areas.
	barban	1/4 to 3/8	When wild oat is in two-leaf stage. Do not spray after four-leaf stage of barley nor more than 14 days after barley emergence.	Do not graze treated fields until after harvest.
Flax	diallate (Avadex)	1 1/2 to 2	Incorporate before planting or emergence in spring or apply in fall within 2 to 3 weeks of soil freezeup and incorporate into soil.	None.
	barban	1/4 to 3/8	When wild oat is in two-leaf stage. Do not apply after the 12-leaf stage of flax.	Do not graze treated fields until after harvest.
Alfalfa and clover; underseeded:				
	In barley — In flax —	diallate diallate	1 1/4 1 1/2 to 2	Incorporate after planting but before emergence. Incorporate before planting or emergence.
Alfalfa and clover; seeded alone		1 1/2 to 2	Incorporate before planting in fall or spring.	None.
Sugar beets	diallate	1 1/2 to 2	Incorporate before planting in fall or spring. (Make fall application after October 15 and until soil freezeup.)	None.
	barban	3/4 to 1	When wild oat is in two-leaf stage. Do not apply later than 1 month after sugar beets emerge.	Do not graze treated fields until after harvest.
Sunflowers and soybeans	barban	1/4 to 3/8	When wild oat is in two-leaf stage. Do not apply after the first trifoliate leaf stage of soybeans nor later than 14 days after soybean or sunflower emergence.	Do not graze treated fields until after harvest.
Corn	diallate	1 1/2	Incorporate before planting or emergence, spring.	None.

NOTE: Atrazine will control wild oat in corn, but may carry over in the soil to damage susceptible crops the following year. EPTC (Eptam, Eradicane) gives fair control of wild oat in crops where these chemicals may be used.

Table 2. Herbicide names and formulations used for wild oat control

Common name	Trade name	Concentration and commercial formulation
barban	Carbyne	1 lb/gal L.
diallate	Avadex	4 lb/gal L. 10% G.
triallate	Far-go, Avadex-BW	4 lb/gal L. 10% G.

Caution

Avoid repeated and prolonged contact with all herbicides, especially direct contact with skin and eyes. Check label directions and restrictions. Avoid wind drift of herbicides to susceptible crops or ornamentals. For more information on herbicides, specific rates of application, and safety precautions, refer to the product label.

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