

FACT SHEET

WILD OAT CONTROL IN TEXAS

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Wild oats, *Avena fatua*, has become a severe problem on 400,000 acres in the Rolling Plains and northern Blacklands of Texas. Infestations range from scattered stands along ditches and edges of fields to solid stands which prevent wheat harvest. Wild oats competes severely with wheat and causes more problems than other weeds in the area. Wild oat seeds in wheat and other small grains reduce the crop's sale value and lower the yield.

Identification

For control measures to be successful, it is important to identify wild oat plants and seed. In the vegetative stage, wild and cultivated oat species are almost alike. Wild oat seedlings can be distinguished from rye, barley and wheat. If the crop is drilled and plants appear between the drills, they are probably wild oats. The first two leaves of wild oat plants twist counterclockwise, while leaves of wheat and barley twist clockwise. For positive identification, dig up suspect plants and inspect the seed. Wild oat seed are brown and have numerous hairs which are visible after germination. Domesticated oat seed usually are lighter colored and do not have the hair. Wild oats also has a twisted, bent awn.

The Problem

Wild oats is very competitive. Researchers from several states have presented information about the wild oat problem and indicated heavy infestations could reduce wheat yields by one-third. Results from tests by the authors in Texas from 1975 to 1978 indicate reductions as high as 50 percent. They found that one wild oat head per square foot reduces wheat yield 6 percent. In badly infested fields 10 wild oat heads

per square foot occur frequently. These severe reductions should be prevented if possible.

Wild oats produces seeds that last up to 6 years if left near the soil surface. If worked deeply into the soil, they may last for many years and be plowed back up. Deep plowing does not rid an area of wild oats; it only prolongs the problem.

Wild oats is being spread in Texas in the following ways:

- Purchasing or using seed grain containing wild oat seeds. The Texas seed law allows up to 300 wild oat seeds per pound of seed; therefore, the purchase of seed does not assure wild oat-free seed.
- Moving combines from infested fields to clean fields. Many fields have a strip of wild oats around the edge and none in the center. This is a very typical combine pattern. Seeds of wild oats stick to anything and are carried easily by machinery.
- Wind and water moving across fields carry wild oat seed.
- Birds and fur-bearing animals transport seeds through their movement.

Prevention — the Best Cure

Preventing wild oats from starting in clean fields is the most economical control method. Prevent the spread of seeds by following these precautions:

- Buy seed free from wild oat contamination. Purchasing seed wheat with wild oats could be one of the most expensive purchases a farmer ever makes. It takes several years to clean fields even with diligent effort. Wild oats reduces wheat production drastically; it is costly to reduce the weed stand enough to produce a crop.
- Prevent machinery contaminated with wild oat seeds from entering a clean field. If a farmer is

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harvesting his own field, combine clean fields first and then clean the combine after harvesting the infested fields. Combine fields which have small areas of wild oats last.

Cultural Control

Use cultural practices to reduce wild oat stands at a minimum cost by following these steps:

- Rogue the field, if small infestations exist. After they show above the wheat and can be recognized, pull wild oats from the field and destroy it. Do not let heads shatter and produce seeds in the fields. This costs money and effort, but it is less if seeds are not allowed to spread. Mow stands in ditches and fence rows around the field or spray with MSMA in March to keep infestations from spreading.
- Crop rotation is the best alternative when wild oats becomes severe. Wild oats germinates in cool soil during the fall or early spring. It is a winter annual like winter wheat and requires cold weather to produce seed. Wild oats emerging in the summer does not produce seed. It is easily controlled after germination with herbicides used in summer row crops. One cultivation in March prevents wild oats from producing seed. If plants which germinate are kept from seeding for 3 or 4 years, viable seeds in the soil are reduced. Roguing a wheat crop eliminates the few left.
- Planting wheat or other small grain and grazing it out is effective. Heavy grazing pressure and plowing before wild oats makes seed is an effective control measure.
- Seed late in the fall if wild oats is in the field. This reduces grazing, but it will probably pay off in the long run. When moisture is available to germinate oats early in the fall, plow before planting the crop. This reduces the potential infestation in the wheat because plants which come up late may be less competitive.
- One of the best ways to combat weeds is to grow a strong competitive crop. A heavy seeding rate makes a crop more competitive and may help in areas where wild oats is a problem.

- Straw burning shortly after harvest may reduce viable wild oat seed on the soil. Heat from the fire may destroy a few seed and reduce dormancy in others. Burning, however, has many disadvantages that outweigh its effectiveness for controlling wild oats.

Chemical Control

Research and demonstrations with chemicals throughout the area since 1974 have shown that wild oats can be controlled chemically. In 1974, no herbicides were available or cleared for use. Presently, three herbicides are available for controlling wild oats in wheat and barley. These are Carbyne® from Gulf Chemical Company, Far-go® from Monsanto and Avenge® from American Cyanamid. No chemical gives 100 percent control, but if used in conjunction with good cultural practices, economic returns can be obtained. Several other chemicals have given good control, but are not cleared for use. *None of the chemicals have clearance for grazing.*

Far-go® is a preplant incorporated herbicide which comes in liquid and granular forms. Incorporate no deeper than 1 inch. Plant at least one-half inch below the treated layer or damage will occur. The soil should be loose and mellow. Clods or trash cause poor incorporation and poor wild oat control. Best results are obtained when incorporation is done twice in opposite directions. Incorporate with a spring tooth harrow (field cultivator), spike tooth harrow or a rolling cultivator set for shallow incorporation. *Incorporation with a tandem disk or offset disk plow is too deep and causes severe injury to wheat.*

Carbyne® is a liquid which must be sprayed when wild oats is in the two-leaf stage. Coverage is very important. Fog on Carbyne, using 5 to 10 gallons of water per acre and a pressure of 45 psi. With aerial application use 3 to 5 gallons per acre.

Avenge® is another liquid which is used post-emergence. Control is best when the wild oats is sprayed in the three to five-leaf stage. However, this material is not presently available through regular market channels.

For all materials, *read the label* and follow directions. Rates, amounts and nozzle angle necessary for effective control are described on labels.

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