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Wild Oat Control

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Wild oats were first reported in Oklahoma in 1970. There are two species of wild oats in Oklahoma, the common wild oat and the wild red oat. It is believed that they were introduced into north Texas and southern Oklahoma in feed for livestock that was brought from the northern states.

Wild oats reproduce by seeds and spread at a rapid rate. Average seed production has been estimated at 250 seeds per plant. The wild oat seed has a twisted and bent awn which rises from near the middle of the back of each seed. This awn twists and untwists with alternate wetting and drying. This motion moves the wild oat seed down into the soil where it can germinate and grow. Wild oats mature earlier than wheat and drop seeds to the ground before harvest thereby reinfesting the field. Seeds also stick to equipment and animals and are carried to other locations. It is anticipated that unless farmers take immediate action to stop the spread of wild oats, within the next five years this weed will severely infest most of the wheat producing area of Oklahoma, cause severe reduction of wheat yields and reduce the price received for the crop due to dockage at the elevator and rejection of severely infested crops.

Competition from Wild Oats

Wild oats are very competitive with wheat for water, space, light, and nutrients. Research with spring wheat in North Dakota has shown that ten wild oat plants per square foot will reduce spring wheat yields by approximately 30%. Some research data in Canada shows even greater yield losses. In some areas of southern Oklahoma the average stand of wild oats is over 50 plants per square foot. This type of infestation should reduce wheat yields drastically based on data with spring wheat. Preliminary studies in Oklahoma and Texas indicate wild oats will tiller more extensively than in Northern climates. In fact over 30 tillers per plant have been found in southern Oklahoma. Studies of competition of wild oats in wheat have been designed in both Oklahoma and Texas. More detailed information on yield losses from wild oats should be available in the near future.

Prevention Practices

The most important thing a farmer can do about wild oats if he does not already have them is to keep them off his farm. There are two primary ways that wild oats get into the wheat fields. One is in purchased seeds and the other is by the mechanical spread of seeds.

Each farmer that purchases wheat seed should personally inspect each lot to make sure that it does not contain any wild oats. It is unlawful to sell any seed that has more than 1 wild oat per pound of seed. Certified, registered and foundation seed cannot have any wild oats in it. Wild oat seeds look very much like tame (cultivated) oats and are easy to recognize. It is very difficult to ever eliminate them on the farm if they get started.

The other primary method of getting wild oats on the farm is by bringing them in with farm equipment. It is not unusual to see a field with a few scattered wild oats about two combine widths around the field. Wild oat seeds stick to the combine after it has harvested a field. When this combine is taken to a clean field, the wild oat seeds are pulled loose as wheat goes through the combine. It is safe to say that once the combine has cut a field with wild oats in it, it will contaminate the next field or fields that it cuts.

Another method of spreading wild oats is by hauling wheat that is infested with wild oats in trucks with open tops. The seeds drop from the truck or blow out around the roads. It is not uncommon to see wild oats growing in section lines and along the highways leading to elevators. These plants should be controlled before seeds are produced and spread into the fields.

Cultural Practices

There is no one method that will completely eliminate all wild oat plants once the field is infested. Although cultural practices are useful, they have limited application because they depend on soil conditions and weather. There are several tillage practices which may prove helpful in reducing stands of wild oats.

Late cultivation with late planting of wheat can help reduce wild oat stands. Most of the wild oat seeds do not germinate during the hot part of the summer, but will begin germinating as moisture and cooler temperature become available in early September. It is a good practice in infested fields to plant the wheat in mid-October or later so that early germinating wild oats can be cultivated out of the fields before the wheat is planted.

Another method of reducing wild oats stands is to rotate a badly infested fields to a summer crop. If the land is planted to a crop that is tolerant to a herbicide which controls grasses such as dinitroanalines, and tillage is used during the winter to destroy germinating plants, stands can be drastically reduced in two to three years. A small percentage of the seeds can still germinate after several years, therefore it is necessary to control stands even after a rotation program.

Another method of reducing wild oat stands is to graze out badly infested fields. This will keep 80% or more of the wild oats from heading out and producing seeds if the field is grazed closely. Some plants, however, will emerge and reinfest the field unless the area is plowed or mowed before the wild oats mature. This should be done at the time the wild oats begin to head out so that no seeds will be produced.

Another method of eliminating wild oats in the field that has only a few scattered plants is to pull them out in May after the wild oats have headed out and are taller than the wheat but before the seeds shatter. Do not throw them back on the ground because wild oats usually mature before wheat, and they ripen over a period of time instead of uniformly like wheat. By the time you find them and pull them up, some of the seeds will probably be mature enough to germinate the following year. When driving by a field it may be difficult to distinguish wild oats from cheat. However, by walking across a field and by looking closely one can easily see that wild oats heads closely resemble cultivated oats.

Wild oats cannot be eliminated by deep plowing. Research at OSU shows that wild oats germinate in fields that have been plowed 8-10 inches deep. Wild oats can emerge from greater depths in the soil than most cereals. This is because the first internode or "mesocotyl" of the wild oat has great power of extension so that it can push the stem apex and surrounding leaf tissue up through the soil for a considerable distance. This allows the first leaf to emerge with the protection of the coleoptile (the sheath surrounding the first leaf). Unfortunately wild oat seeds may live in the soil for several years. If seeds are plowed down and then plowed back up the next year they may still germiante. Cultivation to kill oats that have germinated near the surface of the soil in the fall before planting wheat can be very helpful. Research is presently being conducted to find out how long wild oat seeds will remain viable in the soil.

Chemical Control

All chemical treatments have shortcomings and none can erradicate the wild oats. There are two herbicides presently labeled that will be sold for wild oat control in southern Oklahoma and northern Texas. These are Far-Go (triallate) and Carbyne (barban). Far-Go must be incorporated (mixed into the soil) before planting. Carbyne is a postemergence herbicide that must be applied at a specific stage of growth of the wild oat plants. The biggest disadvantage of these herbicides at present is that they have grazing restrictions on the label. This means that livestock cannot graze wheat that has been treated with these herbicides. Research is being conducted to try to eliminate these grazing restrictions in the future.

Far-Go (triallate)

Far-Go must be applied in the fall before the wheat is planted. The rate of Far-go recommended for Oklahoma is 1¼ lb (1¼ qts.) per acre. This herbicide must be incorporated into the top 1 to 1½ inches of the soil immediately after application. One of the advantages of this herbicide is early wild oat control during the time wheat is tillering. Competition can be critical during these early stages of wheat development. Some years when adequate rainfall occurs in the late fall and early spring late flushes of wild oats may germinate after the Far-Go has dissipated from the soil. However, even with these possible late flushes of wild oats, yield increases have been significant because the wheat tillers well after use of Far-Go to control the early wild oats.

Correct usage and incorporation of this herbicide into the soil is of utmost importance to prevent injury to the wheat and to obtain adequate control of wild oats. The lethal effect of triallate on wild oats is caused by the chemical that is taken up by the underground part of the shoot, not by the roots. The wild oats are killed by the herbicide as they germinate and push the sensitive tissue up into the treated soil. Winter wheat can germinate below the layer of treated soil. It does not push the sensitive part of the plant upward until later, therefore it can grow safely through the herbicide treated layer. This makes it is very important to incorporate the herbicide into the top 1 and 1½ inches of soil so the wild oats will take up the herbicide as they germinate. If the wheat is planted just below the herbicide layer, minimum injury is likely to occur to the crop. Results from research with Far-Go has shown that the safety to wheat is increased if seeds are planted ½ inch or more below the treated layer of soil. Do not incorporate the herbicide deep because the wheat must be planted deeper than the herbicide is incorporated or poor stands of wheat will be obtained.

Far-Go may be used with many of the liquid fertilizers. Specific information is given on the label of how to determine the compatibility of your liquid fertilizer with Far-Go and how to properly mix it with the fertilizer.

Specific instructions for use of this herbicide are given in the Label Use Guide for Oklahoma and Texas by Monsanto Agricultural Products Co. and on the herbicide label. These instructions include information on land preparation, how to mix and apply Far-go, when to apply, proper incorporating into the soil and instruction on seeding winter wheat. Be sure to read these instructions carefully before use of the product.

Carbyne (barban)

Carbyne is a postemergence herbicide that should be applied when the majority of the wild oats are in the two leaf stage of growth. The application rate at this time should be ¼ - 3/8 lbs (2 to 3 pints) per acre. If a second flush of wild oats appears, a retreatment is possible, providing that the 2 pint rate is used for each application. Earlier or later application of Carbyne than the 1½ to 2 leaf stage will result in less wild oat control. If Carbyne cannot be applied when the wild oats are in the two leaf stage, make a single application of 4 pints per acre when the wild oats have 3 to 4 leaves. Do not spray Carbyne when the plants are wet with heavy dew or rain.

For good wild oat control with Carbyne it is important to purchase the correct nozzle tips to control the volume and pressure at application. For ground equipment, volume should be approximately 5 gallons per acre with a 45 psi pressure. Good coverage of the base of the wild oat plants is absolutely essential for good control. The spray boom should be the type that permits installation of 100 mesh of finer screens for each nozzle to prevent the nozzle tip opening from plugging up.

Good control with Carbyne was obtained when the herbicide was applied at the proper stage of wild oat growth and according to the label directions. Late flushes of wild oats may come up after treatment, but these late weeds are not as competitive with the wheat as those that compete during early growth and tillering.

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