

Herbicide Resistant Ryegrass in Oklahoma and Ryegrass Control Options for Spring 2009

PRODUCTION TECHNOLOGY CROPS



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Over the past several years we have advised wheat growers to be on the lookout for ryegrass and control it as soon as they discovered it in their field. We have also warned that ryegrass develops herbicide resistance faster than any other plant species known. Herbicide resistant ryegrass is common in wheat fields in Texas, Arkansas, and several states farther away, but has not been known to be a problem in Oklahoma. Therefore, based on results from our ryegrass control research plots we have suggested that any of several herbicides labeled for ryegrass control in wheat could be used. However, based on our current research we now have to change our recommendations.

In response to questions from wheat growers who said that they could not control the ryegrass in their wheat fields with the herbicides they were using we decided to evaluate the ability of several herbicides to control ryegrass collected from 23 counties in NE, NW, and SW Oklahoma. During June 2008 we obtained ryegrass seed samples from 100 locations. We planted this ryegrass seed plus seed of two varieties purchased locally, on an OSU Research Station in September 2008 and applied 9 herbicides at labeled rates with appropriate additives at the optimum time for each herbicide. The results explained why many wheat growers are having difficulty controlling ryegrass. The majority of the ryegrass samples demonstrated resistance to all three ALS inhibiting herbicides (Group 2 mode of action) that we evaluated (See Figure below). These included Finesse applied immediately after planting at ½ oz/A followed by an activating rainfall, and Osprey and PowerFlex applied postemergence to young actively growing ryegrass. These results suggest that about 7 out of 10 fields have ryegrass that will not be effectively controlled by those herbicides and probably would not be controlled by other Group 2 herbicides such as Amber, OlympusFlex, Beyond, and Clearmax.

However, the ryegrass in the remaining samples, plus the locally purchased seed was still highly susceptible to the Group 2 herbicides.

Fortunately, none of the ryegrass samples demonstrated resistance to Axial or Hoelon, which are both ACCase or Group 1 mode of action herbicides. But 21 % of the samples were only suppressed by Hoelon and

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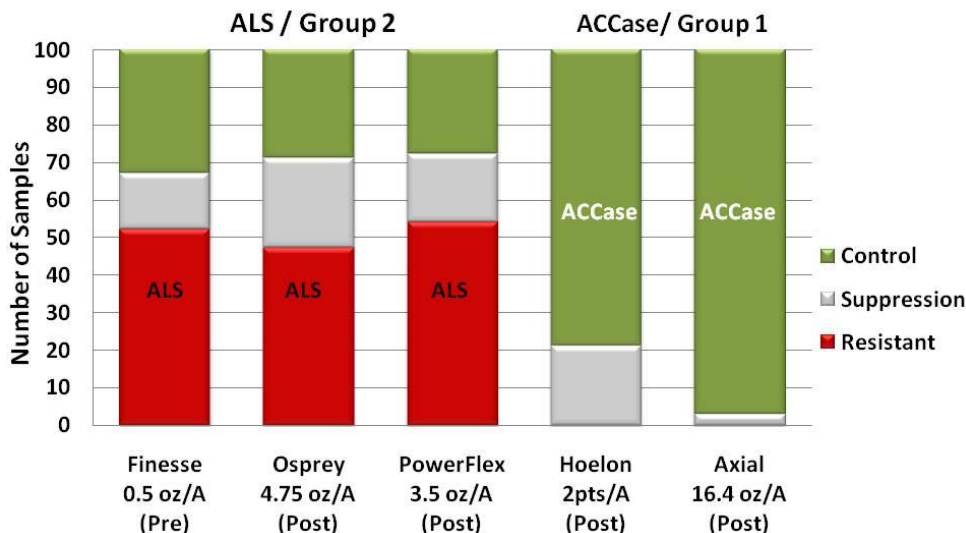
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3 % only suppressed by Axial. These results suggest that resistance to these Group 1 herbicides may be developing in some fields and that only the highest labeled rate of Hoelon should be used.

We were also pleased to see that none of the ryegrass samples demonstrated resistance to Assure II, Select, or Roundup. Therefore, winter canola growers should not worry about being able to kill ryegrass in their canola fields.

Response of 100 Randomly Collected Ryegrass Samples to Wheat Herbicides with Different Modes of Action.



Options for Spring 2009

First, it is important to know which grassy weeds you have in your wheat field. If you have questions, carefully dig up the plants, and try to keep the remains of the seed with the roots, and take it to your OSU County Extension Office or your local Certified Crop Advisor for identification. Remember that ryegrass has shiny leaves compared to wheat or other grassy weeds.

If the herbicide that you have been using for ryegrass control is still working good for you, then you may have no reason to switch to another herbicide.

If the herbicide you have been using for ryegrass control has not been as effective as you wanted, then it is probably time to switch to a herbicide with a different mode of action.

Keep in mind that Hoelon and Axial kill wild oats but don't kill cheat or broadleaf weeds.

Options for Fall 2009

Wheat growers should always spray for ryegrass in the fall. Waiting until after Thanksgiving to kill the ryegrass means that wheat yield will be reduced. A little ryegrass may come up later, but the early ryegrass is

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what will hurt your wheat yield most. Be aware that if you have any herbicide resistant ryegrass one year, you will have more of it the next year.

Consider crop rotation, either to a summer crop or to winter canola. Rotating to a summer crop will allow you to use tillage in the winter to kill the ryegrass. However, be aware that in eastern states, ryegrass is a problem in early seeded no-till corn. Winter crops have a better chance of success if weather conditions are normal in Oklahoma. Therefore, winter canola is an excellent option for cleaning up fields infested with ryegrass and other difficult weeds.

Because ryegrass thrives in no-till fields, we suggest that growers with ryegrass problems should avoid no-till wheat until they get their ryegrass problems under control.

Avoiding herbicide resistant weeds

As herbicide resistant weeds have increased many suggestions have been made on how to manage them. No suggestion has been completely successful and some are not practical. Your best “resistance management strategy” is to do whatever is practical for your operation to avoid the problem. We suggest the following:

1. Never buy wheat seed that has any ryegrass seed in it. You should assume that the seed grower sprayed his field and any weed seeds in the wheat seed are from weeds he couldn't kill. You can assume that you won't be able to kill them either, and they will quickly get worse in your field.
2. Always buy seed from somebody you know to be a reliable source. Make arrangements for your seed supply early before other people buy all the good seed. Inspect the seed wheat field before harvest if you can. Many seed growers are proud of their fields and glad to show them to you.
3. Make sure that every fertilizer spreader you use has not had ryegrass in it. It is still common for cattlemen to get a fertilizer spreader full of urea and dump ryegrass seed on top and then go over their bermudagrass. Most fertilizer dealers are careful about this, but don't take chances.
4. Inform your custom harvest crew that if they cut wheat with ryegrass in it that you will consider hiring a different crew. Then check each combine before it enters your field. Have them attach the headers and blow out the machines before they enter your wheat field.
5. Watch your fence rows. Killing all the weeds along the fence is a good farming practice and is not that hard to do. It also makes it easier to check the fence.
6. Avoid using the same herbicide year after year. If you don't need a herbicide don't use one. If you do, use it early in the season to get the most good out of it. Keep records of what you use and, if you can, sometimes use a herbicide with a different mode of action (it is written on the label). Your custom applicator can help you pick herbicides with different modes of action.
7. Don't cut rates. Cutting herbicide rates lets the more herbicide tolerant weeds live, and they can only cross with each other since the others were killed, and the result is weeds with more and more herbicide tolerance.
8. Rotate crops. This lets you use herbicides with different modes of action to clean up weedy fields. Many wheat growers report better yields after getting out of wheat for a year.
9. Never buy wheat hay to feed to stockers on wheat. Consider why it was cut for hay.

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10. Grazeout wheat followed by discing won't kill ryegrass unless you stop grazing by early May, then spray with glyphosate and then disc a few days later.
11. Try to discourage your neighbors from seeding ryegrass for grazing.
12. Always read and follow label directions for every herbicide you use.

Italian ryegrass

(Lolium multiflorum)



Small florets commonly sold to over-seed lawns and pasture in the fall and winter months.



No hairs present; leaves look waxy or shiny. Use attached floret for ID.



No hairs present on plant; auricles clasp the stem. Leaves and stems are shiny.



Elongated spike inflorescence with 5 to 38 spikelets. Each spikelet contains 4 to 17 florets

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