August 23, 2013

WATERHEMP CENTRAL

At a Soybean Field Day, Lowell Sandell, UNL Weeds Specialist, called our area of the state "Waterhemp Central" when talking to a local producer. Waterhemp is annually one of the most challenging weeds to control in corn and soybean fields. Adding to that challenge, glyphosate-resistant waterhemp populations have been confirmed in seven Nebraska counties and this is growing rapidly.

How many of you had one or more fields where glyphosate alone was not doing a good job on the waterhemp this year?

The first tool is a pre-emergence herbicide ahead or at planting that is effective on waterhemp. Once the soybeans are up, there are three primary herbicide modes-of-action that can be applied for post-emergence control of broadleaf weeds. These are glyphosate (Group 9 Mode of Action), ALS inhibiting herbicides such as Pursuit, Classic or FirstRate (Group 2) and PPO inhibiting herbicides such as Cobra, Flexstar, Cadet or Ultra Blaser (Group 14).

Growers who suspect they have a glyphosate-resistant waterhemp problem should use a tank-mixture of glyphosate and a herbicide from Group 14 and/or Group 2 for effective post-emergence control. To have success using Group 14 or Group 2 herbicides, waterhemp height should be less than 4 inches. Soybean fields with emerged waterhemp where glyphosate has struggled in the past should get top priority for spraying. Ideally, a grower would use both a Group 14 and a Group 2 herbicide if the waterhemp is glyphosate-resistant to slow the selection pressure for multiple-resistant waterhemp.

I call Group 14 the "bronzers" or cell membrane disruptors that require good spray coverage for best control. When sprayed right, they kill the weeds but also turn the soybean leaves brown and then they grow out of it. By spraying right we need to read and follow the label. For instance, the Cobra label says apply at a minimum of 30 PSI and a minimum of 20 gallons per acre. Flat fan or hollow cone nozzles are recommended on the label. Applications made at less than 20 gallons per acre or less than 30 PSI will not provide complete coverage of the weeds and will result in incomplete weed control.

As an applicator this is not what our applicators want to hear, but we need more coverage, more water with the Group 14's. The newer AIXR nozzles that many have switched to should be fine with a lot less drift than flat fans and hollow cone nozzles. We will need to use full rates and weeds like waterhemp need to be less than 4 inches tall when you have glyphosate resistance.

That waterhemp seed pool will be sitting there next spring if you had problem fields this year so we really need to plan ahead. Remember, the use of Group 2 for post-emergence waterhemp control in soybeans may not work so well either, because of past history when Pursuit herbicide first came out and waterhemp developed resistance. If you are still getting good control with a Group 2 that will change if you use this same mode of action every year for two to three years in a row.

Because waterhemp seedlings can emerge over an extended period (May through August), with major flushes in late spring or early summer, it is one of our toughest problems now. Waterhemp cotyledons are egg-shaped and mature plant leaves are alternate, narrowly elongated, often waxy, and shiny in appearance. Stems and leaf surfaces of waterhemp are hairless. These characteristics help to differentiate waterhemp from other pigweed species (e.g., redroot pigweed, palmer amaranth) that are also found in Nebraska. It also makes waterhemp a formidable weed in cropping systems because spray droplets have been shown to bounce off the waxy leaf surface.

Waterhemp is a dioecious species (male and female flowers occur on separate plants) and prolific seed producer (a single female plant can produce more than 100,000 seeds); thus, high genetic diversity is common within a waterhemp population. The genetic diversity in waterhemp makes this weed species prone to evolve herbicide resistance when exposed to high selection pressure (exposure to a same herbicide multiple times within and/or across growing seasons).

Populations of waterhemp in other states such as Illinois have been found to be resistant to as many of four herbicide groups including resistance to some herbicide groups not currently found in Nebraska. Sustainable waterhemp management should be a priority for Nebraska farmers, given waterhemp's well-documented record of resistance evolution to most herbicide modes-of-action available for post-emergence control.

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