The Importance of Scouting Fields for Weeds after an Herbicide Application

Now that most fields have been sprayed for weeds, it is time to scout these fields to determine the effectiveness of the herbicides applied. At 5 to 10 days after an herbicide application fields should be scouted to determine the effectiveness of the application. If all weeds present at the time of application are dead or will die very soon at 5 to 10 days after application, successful weed control has been achieved. However if a few scattered plants or a few plants within one area of the field of a single or maybe two species are present in addition to a continuum of plant responses from dead to near normal, then these surviving plants are likely resistant to the herbicide or herbicides applied. To understand more about how to scout for glyphosate-resistant weeds or low-level weed resistance view the video "Scouting for Glyphosate Resistance" found at the NDSU Weed Science Website (http://www.ag.ndsu.edu/glyphosateresistance).

Herbicide resistant weeds are likely to show up first in areas of the field having the greatest density of weeds such as the edge of the field or limited crop canopy, the greatest diversity of plants caused by a unique field environment such as saline or IDC areas of a field, and/or the greatest selection pressure, such as the edge of the field where a reduced rate of herbicide is applied or areas receiving a higher herbicide dosage such as a limited crop canopy. Weeds are made to survive ALL types of selection pressures, including herbicides, therefore the destruction of surviving plants IS THE BEST means of preserving herbicides into the future.

What is the Impact of Leaving behind a Single Weed in a Field?

If a single waterhemp plant in a one acre area survives a herbicide application and produces 100,000 seeds (this is a conservative number since a single waterhemp plant has been documented to produce nearly **5 million** seeds and a plant near Moorhead, MN produced 644,000 seeds in 2011), what may happen in the future? If just 25% of those seeds emerge next season and if only 10% of those plants are resistant, then 2,500 waterhemp plants will be present at the end of the next growing season in that one acre area. If soybeans were planted in that one acre and 180,000 soybean plants are present at harvest, then only 1.4% of all plants in the one acre at harvest will be waterhemp. If the 2,500 waterhemp plants each produce 100,000 seeds and 25% of those seeds emerge the following season and only 10% of those plants are resistant, how many waterhemp plants will be remaining just two years later? There will be **6,250,000** waterhemp plants at harvest in that one acre! This helps to explain why people have said there were no weeds or few weeds present last year, but now there is a problem. This is why it is so critical to obtain 99 to 100% weed control after any herbicide application.

If plants remain and produce seeds after any herbicide application or for any other reason, especially late-emergence, weed control will become more difficult in the future. Any time you see a single plant in a field remove the plant by hand prior to flowering so it can't become a future problem. If many plants remain in a field after an herbicide application, use a row cultivator to remove the majority of plants and follow up with hand labor to remove all remaining plants. The removal of surviving plants will keep herbicide programs effective for a long time. Remember the slogan "Pull Weeds, Save Herbicides". Ignoring surviving plants WILL NOT solve the problem and will cause a loss of profit for many years into the future.

Remove Volunteer Roundup Ready® Corn from Roundup Ready Sugarbeet and Soybean

The longer a volunteer corn plant remains in a field, the greater the likelihood of a build-up of corn diseases and insects causing greater input costs for future corn crops. Assure II, Fusilade DX (90 day PHI for sugarbeet!), Select MAX, and generic formulations of quizalofop and clethodim can be applied to Roundup Ready soybean and sugarbeet to remove volunteer corn. Consult the soybean and sugarbeet sections of the 2012 North Dakota Weed Control Guide (http://www.ag.ndsu.edu/weeds/weed-control-guides/nd-weed-control-guide-1) for proper rates and adjuvants to control the volunteer corn. Two applications of these products starting when corn plants are small usually provides the most effective control and should eliminate any yield loss of soybean or sugarbeet due to competition.

Preharvest Intervals of Sugarbeet Herbicides Begin to Reduce Herbicide Options

It is that time of the season where certain herbicides may no longer be applied to sugarbeet due to the preharvest interval (PHI) listed on the herbicide label. With record yields of sugarbeet being predicted by all sugarbeet cooperatives of Minnesota and North Dakota at this time, harvest may begin as early as August 15th. That means there are only 55 days until harvest from the time this newsletter is sent out on June 21st. At 55 days prior to harvest, only four herbicide active ingredients remain to be applied to sugarbeet. If fields are not harvested until October 1st, then 102 days remain as of June 21st leaving a few more herbicides available. The PHI for sugarbeet herbicides are as follows:

30 days for Roundup and generic glyphosate formulations

40 days for Select MAX and generic formulations of clethodim

45 days for Assure II and generic formulations of quizalofop and Stinger and generic formulations of clopyralid

60 days for Dual Magnum and generic formulations of metolachlor, Outlook and generic formulations of dimethenamid-P applied prior to 9-leaf sugarbeet stage, Poast, and UpBeet

75 days for Betamix and generic formulations of desmedipham plus phenmedipham

90 days for Nortron and generic formulations of ethofumesate

Consult pages 42 and 43 of the 2012 North Dakota Weed Control Guide and pages 32 to 35 in the 2012 Sugarbeet Production Guide and the herbicide labels for further information.

Additional Reminders for Roundup Ready Sugarbeet Growers

If common and giant ragweed plants are greater than 6 inches tall after a glyphosate application, high rates of Stinger (clopyralid) will be required to control these plants. Apply Stinger alone at 8 to 10 fluid ounces/A (or with glyphosate). The maximum seasonal rate of Stinger that can be applied is 10.5 fl oz/A. Remember the preharvest interval for Stinger is 45 days, which is quickly approaching if the field will be harvested in mid-August.

The maximum rate of Roundup PowerMAX (glyphosate) that can be applied in a single application after the 8-leaf stage of sugarbeet **IS ONLY 22** fl oz/A (0.75 lb ae/A)!

Jeff Stachler
NDSU and University of Minnesota Extension Agronomist – Sugarbeet / Weed Science
jeff.stachler@ndsu.edu