

As recently as July 26, we have observed maretail and cressleaf groundsel emerging in our soybean research plots at the Southeast Purdue Ag Center near North Vernon, IN. These emergence events are occurring well after postemergence treatments of glyphosate have been applied. So the question becomes, would it be worthwhile to treat production fields with the same problems?

Many of the phone calls I receive during this time of the year center on late-season weed control, especially in full-season soybean. Weeds such as giant ragweed, giant foxtail, fall panicum, and common cocklebur emerging through the soybean canopy in late July and early August cause growers to question the overall effectiveness of their weed management practices. More recently, late-season escapes of maretail have generated a lot of attention, particularly in southeast Indiana. Many of the maretail escapes in this area are due to poor control with glyphosate (populations with enhanced tolerance or resistance to glyphosate have been identified in 19 counties in greenhouse screening trials). However, field observations alone may overestimate the number of cases of glyphosate resistant populations. If you suspect you have a true case of glyphosate resistance in your field, please see an article we wrote last year on this topic (<http://www.btny.purdue.edu/weedscience/2003/Articles/horsetail7-23-03.pdf>) and if you are still convinced, you can use the following link to get directions to send samples to us for screening (<http://www.btny.purdue.edu/weedscience/2003/Articles/sform9-2-03.pdf>). Screening efforts this year are supported in part by a grant from the Indiana Soybean Board.

Now, back to question of what to do now about the two winter annuals mentioned earlier. Soybeans can tolerate some weed competition during the first 4 to 6 weeks after emergence and not suffer any yield loss. Yield losses typically occur in soybean when weeds are not controlled for 6 weeks or more after emergence. To manage weeds in soybean, most growers use a combination of soil-applied herbicides and/or glyphosate postemergence weed management practices during the first 3 to 6 weeks after planting. We then rely on the crop canopy to suppress weeds for the remainder of the growing season. So a question to be addressed is, "How much yield loss do I suffer from late emerging weeds if I don't control them?" There are several factors to consider when addressing this question.

First, when one can see weeds above the soybean canopy, they are usually in excess of 3 feet tall. Most herbicides are labeled for use on weeds that are

less than 1 foot tall, and applications to large weeds are mostly ineffective. Second, high temperatures and limited soil moisture reduce the ability of the plant to absorb the herbicide, which will reduce herbicide effectiveness. Third, weeds that have emerged above the soybean canopy have already exerted their competitive effect on the soybean.

My previous research indicates that light infestations of late emerging weeds do not impact yield if there was at least a 6 week weed-free period earlier in the season starting no later than 3 weeks after planting.

So, it is unlikely that the late emerging marestalk and cressleaf groundsel will have any impact on soybean yield. However, the marestalk in this case is behaving as a summer annual and will produce seed by the time soybean is harvested. Postemergence treatments of herbicides (glyphosate, FirstRate/Amplify, or Classic) might be warranted to minimize seed production if you are certain that the field does not contain glyphosate or ALS (FirstRate/Amplify or Classic) resistant populations and soil moisture conditions are optimal for plant growth and herbicide activity. However, you will have to weigh the benefits of reducing weed seed production against some stand loss due to driving a sprayer through tall soybeans.

At this point we don't know if the cressleaf groundsel will produce seed this year or next spring. Stay tuned - each week we seem to learn more about winter annual weeds in southeast Indiana!

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