Bluestem Breezes
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Battling Pigweeds in Soybeans – Part 1

Driving around the area, it's not too difficult to find one or more soybean fields infested with pigweeds. It's a battle for many farmers these days.

This week, K-State Agronomy Specialists Dallas Peterson and Doug Shoup bring to the table several tactics to help us successfully battle pigweeds into the future:

Palmer amaranth and waterhemp were once again fairly prevalent in many Kansas soybean fields this year. Many of the uncontrolled pigweeds have produced seed and will be a continuing problem in those fields in future years.

Other fields, sometimes just across the road from a weedy field, are relatively clean. The dramatic differences in pigweed populations from one field to another are most likely related to differences in the prevalence of glyphosate-resistant populations, weed seed bank, management practices, rainfall patterns, and a little bit of luck.

Glyphosate-resistant waterhemp and Palmer amaranth are now fairly common throughout the state. Most fields actually have a mixed population of susceptible and resistant biotypes, but the uncontrolled resistant plants are the ones that we notice. The proportion of resistance in the population will continue to increase as long as we continue to use glyphosate and eliminate the susceptible individuals. There may still be some fields in which the waterhemp or Palmer amaranth are mostly susceptible to glyphosate, but they are becoming fewer as we spread resistant seed to new fields and continue to rely on glyphosate.

Producers who are still trying to rely primarily on postemergence herbicides to control pigweeds are having an increasingly hard time getting good control. It used to be that glyphosate would provide excellent control of both waterhemp and Palmer amaranth even if those weeds were a foot tall or more. Other herbicide options for postemergence pigweed control in soybeans are most effective if the weeds are less than 3 inches tall.

That means producers have to watch their fields closely early in the season and spray the weeds when they first see them emerging. That's an entirely different mindset than just a few years ago when glyphosate was more consistently effective on pigweeds. Both waterhemp and Palmer amaranth grow very quickly once they have emerged, and can quickly get too tall for good control with postemergence herbicides. If these weeds get to be more than several inches tall, postemergence herbicide alternatives to glyphosate often just burn back the tops of the weeds but will not kill them.

Consequently, a good residual herbicide program in the spring will continue to be important for pigweed management in the future, regardless of the postemergence program. Rain is essential to

activate residual herbicides, but too much rain can move the herbicide deeper into the soil and dilute the concentration in the surface zone where the pigweed is germinating.

Many areas experienced excessive rains in late May, followed by 3 to 4 weeks of dry weather in June. Consequently, early preplant treatments may not have persisted as long as desired and started to break. Preemergence herbicides that were applied when it got dry enough to plant in May often did not get enough rain to activate the herbicides until several weeks later. Pigweeds that germinated during that timeframe escaped control.

This scenario often complicates postemergence control decisions as there may not be a lot of weed escapes early and we know there will be more weeds germinating when it finally rains. However, the early emerging weeds grow very rapidly with warm temperatures and quickly get beyond optimum treatment sizes. It probably is best to go ahead and make a timely postemergence treatment to those early emerging pigweeds and not wait for rain, as the preemergence herbicide will get activated when it finally does rain. Additionally weeds that emerge with, or soon after, crop emergence are the most competitive and can result in greater yield losses than later-emerging weeds. Unfortunately, the weather often doesn't cooperate with us to get things done in a timely manner and optimize herbicide performance.

For more information visit the Extension Office (215 Kansas, Courthouse, Alma; kamayer@ksu.edu; 765-3821). For Bluestem Breezes archives, check out wabaunsee.ksu.edu.