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Herbicide Resistant Waterhemp: What can we do now?

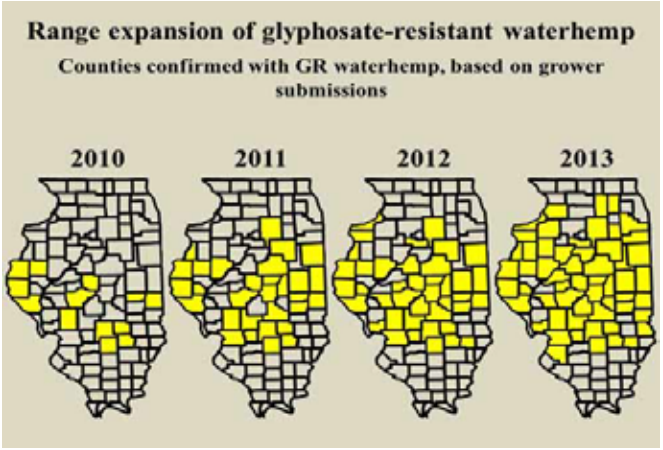
by Stephanie Porter

During the last two years, waterhemp has exploded in soybean fields. Are they herbicide resistant? Were they too tall to be controlled by a post-herbicide application? Did they receive their post-herbicide application or was it too wet? Had herbicide residual leached away? Was the waterhemp mostly late emerging weed populations?

We can't be sure of herbicide resistance without testing, but in the last few years, we have to assume that more and more waterhemp (and other weeds) are resistant to glyphosate. As of last year, it was estimated by Dr. Aaron Hager, University of Illinois Crop Science Weed Specialist, that around 20% of waterhemp in Illinois is resistant to glyphosate alone.

Since 2013, it has become evident to growers that glyphosate is no longer working, so they have turned to conventional herbicides for weed control in soybeans. They turned to a group of herbicides that seem to have the next best activity on waterhemp, the group 14 herbicides, that are referred to as PPO's or burners.

Often times, in the worst case scenarios, growers were applying up to a three pass herbicide program that consisted of pre and post herbicides of PPO residuals to combat amaranths (waterhemp, pigweed, and Palmer amaranth) that continue to emerge throughout the season. Again, we began using the same herbicide mode of action (group 14) within the same growing season. What has happened? As you can see in Map 2, Missouri and other states are now realizing that not only is the waterhemp resistant to glyphosate (group 9), but also resistant to PPO herbicides (group 27).



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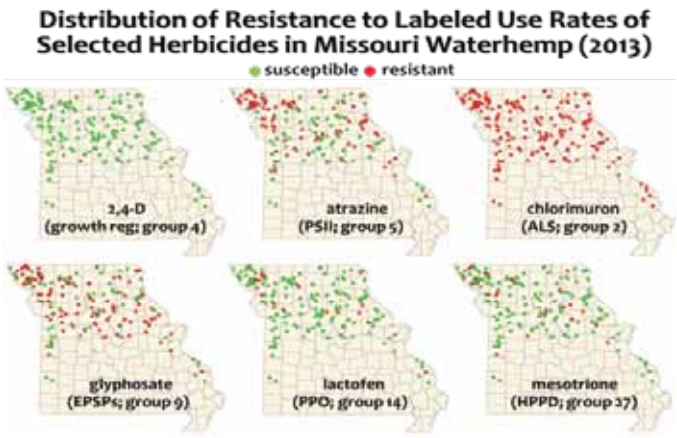
Last year, Dr. Aaron Hager estimated that 15% of the waterhemp in Illinois was resistant to PPO herbicides alone and 52% of Illinois waterhemp was resistant to both glyphosate and PPO herbicides. In addition, Illinois has the worst case of waterhemp resistance in the Midwest. Just like Missouri, waterhemp being discovered to not only be resistant to glyphosate and PPO herbicides, but also ALS (Group 2) and HPPD (Group 14) herbicides.

What can we do now for amaranth (waterhemp, pigweed, or Palmer amaranth) control in soybeans?

- Start clean: Use burndown herbicides or tillage.
- Must have a pre-residual herbicide (ex. PPO's (Group 14 herbicides). Many are available as premixes and consist of multiple sites of action) – be sure to apply a full rate of herbicide.
- Scout two weeks after crop emergence – Apply a post/foliar herbicide (include a residual if needed). Make an attempt at a different site of action than the pre-residual herbicide application (ex. If planting herbicide traited soybeans: Liberty® (Group 10 herbicide), Dicamba or 2, 4 –D (Group 4 herbicides). Apply herbicides according to their label before weeds are too tall. The key is coverage because of thick and varied emergence.
- Scout one to two weeks after post-herbicide application to make sure weeds are being controlled. Palmer amaranth might require another post foliar herbicide application before it is 4 inches tall.
- If all else fails, chopping crews will be needed before weeds reach the reproduction stage to deter the spread of the millions of seeds.

The key to curtail waterhemp resistance on your farm is to rotate herbicide sites of action (different herbicide groups) within each season, not just every year! Rotating different herbicide groups within a corn cropping system is easy, but when it comes to good waterhemp control, rotating herbicide sites of action within soybeans is not as easy.



http://ipm.missouri.edu/ipcm/2014/4/The-Situation-with-Herbicide-Resistance-in-Missouri-Waterhemp/