MU WEED CONTROL STUDIES – “OUT OF THE ORDINARY” WAYS TO CONTROL PROBLEM WEEDS

Farmer Blog

By Greg Luce, Research Director, Missouri Soybean Merchandising Council

A major problem faced by farmers in Missouri, and across the country, is how to control resistant weed species. For no-till production, marestail can be a big problem if not controlled early. For soybean farmers, the most formidable weed problems are either waterhemp or its oversized cousin, palmer amaranth. We had huge issues with waterhemp in the 1990s and then Roundup ready soybean came on fast and provided excellent control. At least for quite a few years. Then the resistance came on strong and Liberty Link, Xtend and Enlist soybean varieties were brought forward, largely to add herbicide options for control of waterhemp and palmer amaranth. Extension weed specialists have done an outstanding job promoting two pass programs regardless of whether conventional soybean or any of the herbicide resistant options are utilized. We also live and work with the idea that no matter what option is used, weed resistance will prevail at some point in time.

In Missouri, the MU Extension Weed Specialist, Dr. Kevin Bradley, has done a great job promoting management strategies that will hold resistance in check. However, Dr. Bradley has taken even further steps to examine other, less conventional, ways to control our problem weed species. One of the methods being studied at MU, with funding from the Missouri Soybean Merchandising Council with dollars from the Missouri soybean farmers and their checkoff, is the Weed Seed Terminator. This method is essentially a grinder mounted on the back of a combine that renders the vast majority of the weed seed non-viable. This work shows much promise and we look forward to another season of excellent results.

Another very interesting research project Dr. Bradley and his team are evaluating involves testing the “Weed Zapper”. This project is partially being conducted on the Missouri Soybean Association’s Bay Farm Research Facility and is also funded by MSMC, on behalf

of the Missouri soybean farmers and their checkoff. This research is another very interesting approach for control of herbicide resistant weeds like marestail, waterhemp and palmer amaranth.

The machine, made in Sedalia, MO, has a large electrical generator pulled behind a tractor with an electrocution bar mounted on loader arms. See below:

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Dr. Bradley and crew have been experimenting with the Weed Zapper at plots on the Bay Farm, and at the adjacent MU Bradford farm, for control of various weed problems and scenarios. The field picture below is a strip of marestail on the Bradford farm that was "zapped". The electrocution killed the marestail plants that it touched. Once marestail has bolted it is very difficult to control with any herbicide, and when large nearly impossible to kill. This control method looks very promising for control of large escaped marestail plants. The bar used for the study is 10 ft across, however, the company has a 30 ft option as well.

It certainly has a lot of promise for controlling resistant weed escapes in soybean. A main test block for this project is on the Bay Farm and is examining post weed control in soybean and it will continue through the summer. One focus of the study is to measure the safety to soybean plants that may be touched by the electrocution bar. It appears, and is currently being verified, that the heavy leaf foliage in soybean does a very good job of keeping the plant from harm and only the touched leaves are "zapped". With targeted weeds like waterhemp, the stem is what is hit by the electrocution bar and that effectively kills the plant. Weeds like lambsquarters, waterhemp, palmer amaranth, marestail all appear to be controlled well by the "Weed Zapper". We applaud the efforts to examine the various approaches for the control of our most challenging weeds. We are very anxious to see the results from Dr. Bradley's work this fall!

For more information contact Greg Luce: gluce@mosoy.org *or 573-473-7079*

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