

► New And Old Technologies In Cotton Weed Control

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As glyphosate resistance (GR) continues to be a problem, Mid-South producers are looking for better solutions to help combat GR species. There are now no less than ten GR weed species in the Mid-South and no less than six confirmed GR species in Tennessee, with Palmer amaranth (*Amaranthus palmeri*) being the most difficult of these to control. Moreover, many of these GR weed species are also resistant to numerous other herbicide modes of action. There are no new herbicides on the horizon that will control large Palmer (> 6 inches). Therefore what is needed to control GR Palmer amaranth and other GR weed species in the future is an integrated system that includes cultural practices in combination with herbicides. Current research is being conducted that evaluate cover crops with herbicides. Moreover, some of these herbicides will be “new” to the crop as new herbicide tolerant traits will become available.

Currently, Roundup Ready Flex and Liberty Link systems are the primary weed management systems in production in the Mid-South area, and are still effective in controlling many weed species. However, both of these systems do have limitations as a stand-alone treatment. These systems need to be incorporated into a weed control program consisting of PRE’s, applying multiple modes of action, timely POST applications, and integrated cultural control methods to successfully control problematic GR weeds.

Integrating cultural control methods, such as cover crops, is a viable option available for area producers to reduce herbicide selection pressure and gain early season weed control. Winter-annual cover crops have readily been used as a conservation practice to increase soil quality and to provide early season weed suppression. In our current research, the use of a high residue cover crop has controlled most winter-annual weeds. However, cover crops do not provide season long weed control without the use of herbicides. Therefore, we are continuing to research herbicide and cover crop integration to aid in making effective weed management decisions.

Coming online in the near future is Dow Agro Sciences 2,4-D + glyphosate + glufosinate tolerant trait, which can prove to be a new tool to help control glyphosate resistant weeds. This technology looks to be quite beneficial when being added to

a weed control program using PRE's, multiple modes of action, and timely application of POST's. Also on the horizon is Monsanto's dicamba + glyphosate + glufosinate tolerant trait, which will also prove to be a good asset in situations where glyphosate resistant populations of weeds are present. This technology also looks to show best results when being utilized in weed control programs using PRE's, multiple modes of action, and timely applications of POST's.

After more than a decade growing cotton in fields infested with multiple GR weeds growers and researchers have come to realize that a weed management system is needed to consistently raise a profitable cotton crop. These systems must utilize all the weed management tools available including older technologies like cover crops integrated with newer technologies.