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## **DUAL AND STAPLE TANK MIXES**

Andy Kendig

Extension Weed Specialist

Commercial Agriculture Program

MU Delta Center

Dual and Staple are two mix partners being promoted for early over-the-top application to Roundup Ready Cotton. We've done a lot of work with them and know that some growers are using them.

The Staple-glyphosate mixture is almost an old standby. Most of this was used as DuPont's Staple Plus product which was a premix of the two. Now DuPont is back to selling straight Staple and letting you mix it. Staple and glyphosate have some strengths and weaknesses that mesh together nicely. Glyphosate is strong on cocklebur, grasses, and pigweed which Staple is less strong on. Staple is strong on morningglories and velvetleaf which glyphosate is less strong on. Also, if the rain hits just right, you can get a nice residual boost out of the Staple.

We've always had excellent results with glyphosate-Staple mixtures. The bigger issue is economics. Glyphosate folks like to say that the best thing to add to glyphosate is MORE glyphosate. DuPont recommends using a little bit less glyphosate in some of their mixtures. Staple is more expensive than glyphosate, so it is tempting to just throw another few ounces of glyphosate in. If you have morningglory or velvetleaf problems, then the tank mix is probably worthwhile. Also, if you have a lot of acres, the little residual kick might be beneficial. It isn't much residual, but cotton is still sensitive to timing and four days can make or break a weed control program. Some growers feel that the residual helps with Palmer amaranth control and some feel it does not. A likely explanation for this is the existence of ALS resistance in some of our Palmer amaranth.

The Dual tank mix is a different concept. First of all, the actual product is Dual Magnum (or Dual II Magnum). The rates have changed with the Magnum products but the activity is the same. For simplicity, we'll refer to these products as "Dual". Dual has virtually no postemergence activity, but is being used for residual control of grasses, nutsedge, but especially for Palmer amaranth. For those situations where you need all the help you can get with Palmer, you should definitely consider this mix. On the other hand, if those weeds haven't been a problem and you are happy with straight glyphosate, you may want to stay the course.

Dual can cause some light spotting on cotton leaves; but with over-the-top applications, it's in the upper 25% of herbicides for crop safety. It's important to get a rain to activate the Dual. We've seen some big benefits for Palmer amaranth control. Again, the real benefit is time savings. If the weather is nice and you can spray glyphosate on time Dual may not help. But if you're spread thin, or are run out of the field by a big rainstorm, the residual activity can be a big bonus.

Should you tank mix at the 1-leaf stage or the 4-leaf stage? Our data have not shown a clear advantage to one timing over another. The companies seem to promote either timing or even

spraying the mix at both timings. The question of exactly when to spray is difficult to answer, but the decision about whether to use a tank mix should be straight forward.