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PROJECT PROPOSAL - LOUISIANA SOYBEAN AND GRAIN RESEARCH
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New _____ Continuing X

FEEDGRAIN AND WHEAT WEED CONTROL RESEARCH IN NORTHEAST
LOUISIANA

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Summary of Results: In 2005, feedgrain and wheat weed control research conducted at the Northeast Research Station focused on: 1) evaluation of burndown programs for corn and grain sorghum; 2) evaluation of weed control programs for corn (including transgenics), grain sorghum and wheat; and 3) evaluation of new herbicides for weed control in corn and wheat. Each year about one third of the 40 to 60 studies conducted in corn, grain sorghum and wheat will be either in their first, second or third year. Due to space limitations only selected studies are discussed here.

Sequential applications of glyphosate and Steadfast followed by Accent resulted in slightly (< 10%) broadleaf signalgrass control compared to sequential applications of Accent. Accent at 0.4 oz/A followed by 0.3 oz/A Accent generally resulted in better weed control than two applications of Accent at 0.35 oz/A. Tank mixing both glyphosate and Accent with atrazine improved overall weed control. The best corn yields (180 bu/A) were observed in plots treated with Steadfast and followed by Accent. Sequential applications of Accent resulted in corn yields equal to or greater than sequential applications of glyphosate.

In another study, the best conventional program was Bicep II Magnum applied at V1 followed by Accent plus atrazine and the best Roundup Ready program was two applications of glyphosate plus atrazine. Few differences in weed control were observed between the best conventional program and the best Roundup Ready program. Yields were similar for both conventional and Roundup Ready hybrids and programs. These results suggest that choice of between planting a conventional corn hybrid and a Roundup Ready hybrid should not be made based on the ability to control weeds.

Some corn producers have questioned the need for preplant glyphosate applications on stale seedbeds that are planted to Roundup Ready corn. Despite excellent weed control from all treatments, corn yields were dramatically affected by stale seedbed management programs. In 1994, the best corn yields were observed in plots where weeds were removed before planting. Dragging beds prior to planting was better than doing nothing at all, but still resulted in an average yield reduction of 20%. On average, planting as is and removing weeds at V2 resulted in a 30% yield reduction. In 1995, corn yields were similar for removing weeds before planting and the dragging treatments. Planting as is and removing weeds at V2 resulted in an average yield reduction of 65% in 1995. In both years, 2,4-D applications at V2 reduced corn yields from 15 to 55% compared to atrazine treatments. These results indicate that removing weeds at or before planting is necessary to achieve maximum corn yields, even when weeds can be effectively removed after corn emergence.

Redvine, a perennial vine, has become more problematic with the widespread adaptation of conservation tillage practices. While several herbicides provide excellent suppression of top growth in the spring, none are able to prevent regrowth. Early season suppression of redvine helps prevent yield losses, but the harvest of low growing crops are often impossible or not economical in heavily infested areas. The standard program of 2 lb ai/A dicamba is cost prohibitive on fields with large infestations. Redvine control has been best when fall applications of glyphosate were made between September 15th and November 1st. Current research suggest that applications should be made after mid-September, as soon as there is adequate regrowth and environmental conditions favor good herbicide activity. Overall, the best redvine control was observed from 2 lb ai/A glyphosate applied two years in a row. If only one application was made, 4 lb ai/A glyphosate was required to suppress redvine. Glyphosate applied at less than 2 lb ai/A did not control redvine. Tank mixing glyphosate with other herbicides generally resulted in less redvine control than glyphosate alone.

Metolachlor formulations (generic verses name brand) were evaluated in 2005. Overall, the best annual grass control was observed in plots treated with Bicep II Magnum. Metolachlor formulations had little effect on barnyardgrass control. Higher rates of Trizmet II (generic Bicep II Magnum) and Mee-Too-Alachlor (generic Dual II Magnum) were required to control signalgrass, crabgrass and yellow foxtail equivalent to their name brand counterparts. Even at the higher rates, Trizmet II and Mee-Too-Alachlor often resulted in less control of certain grass species late in the season. Differences between treatments for corn yield were not observed.

Several new and experimental herbicides were also evaluated in corn and wheat. Many of the new herbicides evaluated offered additional control of selected weeds. However, none of them were stand alone herbicide programs. Atrazine is still a required component of most weed control programs in corn and grain sorghum. However, some of the new herbicides such as Callisto, Lumax, Steadfast and Equip will help improve the control of several troublesome weeds. Osprey did an excellent job of controlling ryegrass wheat. Still, older products such as Sencor are needed for broad-spectrum weed control.

Plans for 2006: Research in 2006 will continue to focus on the evaluation of new weed management technologies. Studies in 2006 will include the evaluation of: experimental and/or new herbicides for corn, grain sorghum and wheat; ryegrass control in wheat; perennial weed management; morningglory control; annual grass control in corn and grain sorghum, and johnsongrass management. Post harvest weed management programs following corn, that do not interfere with cotton or soybean, will be evaluated. Programs for desiccating grain sorghum will also be evaluated.