

## Efficacy of Cruiser<sup>®</sup> 5FS and Dermacor<sup>®</sup> X-100 Against Rice Water Weevil in Mississippi

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The rice water weevil is the most important and yield limiting insect pest of rice in Mississippi. Prior to 2010, foliar application with a pyrethroid insecticide (ie Karate, Mustang Max, etc.) was the only control option available for rice water weevil management. Cruiser<sup>®</sup> 5FS (Syngenta Crop Protection) and Dermacor<sup>®</sup> X-100 (DuPont) were granted full labels for use during the spring of 2010 in the U.S. Prior to 2010, an extensive testing program was conducted through Experimental Use Permits and Section 18 registrations across the southern U.S. to evaluate the value of these seed treatments for rice producers. Numerous experiments were conducted in Mississippi and the results will be presented in this report.

Experiments and demonstrations were conducted from 2008 to 2010 at the Delta Research and Extension Center in Stoneville, MS and on grower farms across the Delta. These trials consisted of small plot replicated experiments and large plot demonstration trials. In general, trials were planted at various seeding rates ranging from 25 lbs/A to 120 lbs/A with multiple rates of thiamethoxam (Cruiser<sup>®</sup> 5FS) and chlorantraniliprole (Dermacor<sup>®</sup> X-100). Root core samples (4 in. diameter) were collected at 3-5 weeks post flood and transported to the laboratory. Samples were washed through a ¼ inch screen into a 40 mesh sieve to collect rice water weevil larvae. The sieves were placed in a 5% salt water solution and the numbers of larvae that floated to the surface were counted. At the end of the season, plots were harvested and yields were measured and converted to bushels per acre.

Both Dermacor and Cruiser have continued to provide good control of rice water weevil in Mississippi. Percent control over the 3 years has ranged from 0 to 100% control depending on initial larval densities. In general, little benefit is observed from either seed treatment when rice water weevil densities are low. Both seed treatments provide good control when moderate populations of rice water weevil are present on roots. When higher populations occur (>20 larvae per core), Dermacor provides better control than Cruiser; however, control with Cruiser is acceptable. Both of the seed treatments provide significant benefits in terms of yield. Over the 3 year period, Dermacor provided an 11.8 bu/A yield increase and Cruiser provided an 8.3 bu/A yield increase. Based on the yield results shown in the figures below, Dermacor and Cruiser provided a 72% and 79% probability of a net return, respectively. Based on these results, insecticidal seed treatments are recommended for rice water weevil control in Mississippi.

