

## Impact of Seed Treatment Rates on Rice Water Weevil Control in Hybrid Rice

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Hybrid rice was recently introduced as a high yielding alternative to traditional cultivars. Hybrid rice produces more tillers than traditional cultivars and thus can be planted at much lower seeding rates. Seeding rates for hybrid rice can be as low as 20-25 lbs seed per acre; whereas, traditional seeding rates are normally in the range of 70-90 lbs seed per acre. This can have an impact on seed treatment rates because the rate of insecticide per acre is directly proportional to the seeding rate. In the case of Cruiser 5 FS, the labeled rate is 3.3 fl. oz per 100 lbs seed regardless of seeding rate. In contrast, the rate of Dermacor X-100 varies based on seeding rate. Dermacor rates range from a low of 1.5 fl. oz per 100 lbs seed at a seeding rate of 120 lbs per acre up to 6 fl. oz per 100 lbs seed at a seeding rate of 30 lbs per acre. Because of this, research needs to be conducted on hybrid rice to determine the optimum seed treatment rates per 100 lbs of seed for Cruiser 5FS and Dermacor X-100.

Experiments were conducted at the Delta Research and Extension Center in Stoneville, MS and on grower farms to determine the optimum seed treatment rates for hybrid rice. Hybrid rice seed was planted at 25 lbs seed per acre with different rates of Cruiser 5FS and Dermacor X-100. The rates for Cruiser 5FS were 3.3, 6.6, 9.9, and 13.2 fl oz/cwt. The rates for Dermacor X-100 were 2.0, 3.25, 4.75, and 6.0 fl oz/cwt. Rice water weevil densities were determined 4 weeks after flood. Plots were harvested at the end of the season and grain yields were determined.

Rice water weevil densities varied among the different rates for both Cruiser 5FS and Dermacor X-100. In general, rice water weevil densities were higher on the lower seed treatment rates. Treatments that did not lower larval populations below the untreated control included Cruiser at 3.3 and 6.6 fl oz/cwt and Dermacor at 2.0 and 3.25 fl oz/cwt. The highest rate of each seed treatment (Cruiser 13.2 oz, Dermacor 6 oz) provided the greatest level of control of rice water weevil. In terms of yield, Cruiser at 9.9 and 13.2 oz/cwt and Dermacor at 6 oz/cwt had the highest yields. Dermacor at 4.75 oz/cwt had significantly higher yields than the untreated control. This demonstrates the importance of using the appropriate rate of seed treatment with hybrid rice. Currently, the only labeled rate of Cruiser 5FS is 3.3 oz/cwt regardless of seeding rate. This does not appear to provide acceptable control of rice water weevil at low seeding rates. In contrast, Dermacor X-100 has a rate range on the label based on seeding rate. Dermacor X-100 at 6 oz/cwt is the best option on hybrid rice.

