

cultivars. Filled grain panicle-1 tended to decline with increasing seeding rates and was maximized for both cultivars at the lowest seeding rate of 15 seed ft-2. Grain weights were lower at the higher seeding rates (45 and 60 seed ft-2) as compared to the lower seeding rates (15 and 30 seed ft-2) for Cheniere. Similarly, grain weight was numerically lower at the 15 seed ft-2 seeding rate as compared with all higher seeding rates. While all yield components tentatively influence rough rice grain yield, single linear regression analysis identified panicle density as the single most influential yield component. Panicle density could explain 49 and 51% of the variation in yield for Jupiter and Cheniere, respectively.

## ► New Tools For IPM In Rice

**Presented by Dr. M.O. Way**

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**Presented by Mark Nunez**

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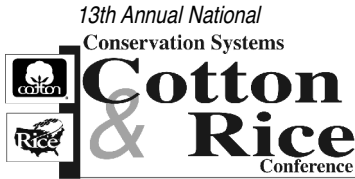
### Seed Treatments

The rice water weevil (RWW) is a key pest of rice in the South, but other insects, such as chinch bug, aphids, thrips, leafhoppers and black bugs, can be serious pests of seedling rice. With the cost of seed increasing and seeding rates decreasing, protecting seed from RWW as well as the above seedling pests is an excellent strategy to help insure a vigorous, uniform stand which is critical in a conservation tillage system. In 2008 and 2009, the seed treatment Dermacor X-100 was granted a Section 18 in Texas and other southern rice-producing states. The active ingredient in Dermacor X-100 is chlorantraniliprole. This seed treatment is effective against RWW, fall armyworm, South American rice miner and stalk borers, but does not control insects with piercing-sucking mouthparts, such as chinch bug. We hope to gain another Section 18 for Dermacor X-100 for the 2010 growing season.

For the past several years, we have evaluated other seed treatments with activity against RWW and insects with piercing-sucking mouthparts. Belay 2.13EC (active ingredient = clothianidin) and CruiserMaxx (active ingredient = thiamethoxam) provide excellent control of the above pests. The CruiserMaxx seed treatment also contains 3 fungicides to control an array of seedling rice diseases. CruiserMaxx recently was granted a Section 3 label, so this seed treatment will be available to southern rice farmers in 2010. CruiserMaxx also provides control of grape colaspis which is a serious pest of rice in Arkansas.

### Foliar Treatment

In recent years, rice stink bug (RSB) has become more problematic in Texas. The average number of annual insecticide applications for RSB in Texas rice is 3 with some farmers spraying as many as 6 times. The vast majority of these applications involve pyrethroids and methyl parathion. Very high populations of RSB can develop quickly in Texas rice fields--especially in counties west of Houston. Frequently, sorghum fields near rice are harvested when rice is heading or in grain maturation stages of growth. Thus, high populations of adult RSB move from sorghum to rice. This can occur multiple times during the season, so rice farmers are forced to spray often. In addition, some scientists speculate the boll weevil eradication program has killed beneficial arthropods which suppress RSB populations. Also, adoption and widespread planting of Bt cotton may have increased populations of an array of stink bug species on a regional level. Finally, our data indicate populations of Texas RSB are harder to control with a pyrethroid than populations in other southern rice-producing states. In response to this added demand for more effective tools to control RSB, we recently evaluated Tenchu 20SG (active ingredient = dinotefuran) and other novel insecticides. Our data indicate Tenchu 20SG can provide up to 11 days residual activity against RSB. Thus, in 2008, a Crisis Exemption was granted for this product for Texas rice farmers. Again, in 2009, a Section 18 was granted for our farmers. Reports from the field confirm our results. We are in the process of applying for another Section 18 for Texas for Tenchu 20SG for the 2010 growing season. Other promising new RSB tools---not yet labeled on rice--- include Endigo



## ► **CORN PRESENTATIONS**

### ► **Twin-Row Corn Production Moving Forward – Cultivar Selection, Nitrogen Management And Seeding Rates**

**Presented by Dr. M. Wayne Ebelhar**

*Research Professor/Agronomist, Mississippi State University*

Twin-row crop production systems have been adopted on many fields in the Mississippi Delta especially in corn and soybean systems. Producers are investing in equipment that is capable of planting corn or soybean in dual rows (8 to 10 in apart) on the top of prepared raised beds that are spaced at 38 to 40 inches. A multiple-year research program was conducted from 2005 through 2008 in a producer field near Stoneville, MS to evaluate the interaction of nitrogen (N) rates (180, 220, and 260 lb N/ac) and seeding rates (five rates ranging from 24,380 to 40,360 seeds/ac in approximately 3,000-seed increments) for twin-row corn on 38-in beds. The field study consisted of a 3x5 factorial arrangement of N rates and seeding rates with four replications. The study was planted each year on a Bosket very fine sandy loam soil (Mollic hapludalf), following cotton (2005-2007) or corn (2008), with a MonosemJ twin-row vacuum planter (8 to 10 inches between rows). Seeding rates were based on calibration tables supplied by the planter manufacturer. Stand counts, made each year near the time of sidedress N application, indicated that final stands were higher than expected each year. Damage from high winds and rainfall associated with Hurricane Katrina prevented any yield determinations in 2005. The study was rotated to a different field and repeated in 2006. Corn yields with irrigation were excellent. There was significant response to both increasing N rates and increasing seeding rates. Grain yields averaged 249, 252 and 255 bu/ac for the 180, 220, and 260 lb N/ac rates, respectively, when adjusted to 15.5 % moisture. Grain yields increased from 222 bu/ac up to 272 bu/ac as seeding rates were increased from 24,380 to 40,360 seeds/ac. Each incremental increase (approximately 3,000 seeds/ac) in seeding rate provided a significant increase in grain yield. While both increased N rate and increased seeding rate significantly increased grain yield, only increased seeding rates provided a significant economic return as the response to increased N was not sufficient to cover the cost of the applied fertilizer material. The 2007 growing season also produced excellent corn grain yields. Again, there was a significant response to increasing N rates, with yields of 245, 246, and 249 bu/ac for the 180, 220, and 260 lb/ac N rates, respectively when averaged across seeding rates. These small differences, even though statistically significant, were not economically significant. Each increase in seeding rate resulted in a subsequent increase in grain yield. The yields were 229, 242, 249, 254, and 259 bu/ac for the respective seeding rates. With higher populations than anticipated, based on calibration tables, producers could be spending more for planting seed than needed. In 2008, corn was grown in the same field as 2007 which meant that corn followed corn rather than some other rotation crop. Monosem™ provided an updated calibration table for 2008 that showed about an 8 to 10%