Corn Planted Too Densely Can Hurt Yields

ST. JOSEPH, LA.

Conventional wisdom says the more ears of corn to the acre, the greater the yield will be. While this is true to a certain extent, too many corn plants to the acre can cause problems, said Rick Mascagni, an LSU AgCenter agronomist at the Northeast Research Station.

Mascagni studies the management practices that can influence yields of corn and grain sorghum, including plant density, nitrogen rates of fertilization and timing of the application, variety type and irrigation.

He is examining seeding rates on both irrigated and dry-land corn fields. He says with a bag of corn seed averaging nearly $300, it is important for producers to get the most they can out of their seed.

"A grower can increase the risk of aflatoxin by having too many plants, especially on nonirrigated fields," Mascagni said.

Mascagni says the seeding rate for dry-land corn should be approximately 26,000-28,000 seeds per acre with irrigated fields having a seeding rate of 32,000-34,000 seeds per acre.

"Three corn plants per foot on a 40-inch row are about 40,000 plants per acre," Mascagni said, adding that plant populations this high probably do not increase yield but can create stress on nonirrigated soils, which may lessen plant quality. Additionally, higher populations can result in increased lodging, which hurts yields.

Mascagni is also studying the performance of flex-ear corn hybrids. The flex-ear variety is influenced by environmental conditions during the growing season. If conditions are dry, ear size is not affected. However, if adequate moisture conditions exist, the flex-ear has the capacity to produce a larger ear with more rows and kernels per row. An advantage of the flex-ear is that the optimum plant populations are generally lower compared to a fixed-ear hybrid.

In 2012, the optimum plant population for flex-ear hybrids was about 28,000 plants per acre on an irrigated Sharkey clay study at St. Joseph, averaging nearly 215 bushels per acre.

One way producers can maximize their profitability with grain sorghum is to get a second harvest or a ratoon crop from a single planting. This practice is more common with sugarcane and rice than grain sorghum in Louisiana.

Mascagni is looking at whether a ratoon crop of grain sorghum is economically viable in three locations – Crowley, Alexandria and St. Joseph. In 2012, an early frost terminated the ratoon crop prematurely. For 2013, Mascagni is repeating the study.

Mascagni is also studying optimum planting dates and nitrogen rates for grain sorghum. Δ