

# 2009 Demonstration Report



## THE LEARNING CENTER

at Scott, Mississippi

### Corn Replant Strategies

Unfortunately Mother Nature does not always cooperate, and sometimes after a crop is planted problems can occur and producers are faced with the decision of whether or not to replant. When deciding to replant corn, several factors must be assessed such as evaluating the surviving stand for plant numbers and spacing, replant timing, and production potential.

#### Study Guidelines

A corn replant strategy study was conducted in 2009 at The Learning Center at Scott, MS to better assess how replant decisions can affect final harvest yield. To evaluate potential relative maturity effects on grain yield in a replant situation, two corn products were selected: a 114 relative maturity (RM) and a 119 RM. Large blocks of both corn products were planted in early March at 36,000 seeds/A with fertility, irrigation, and weed control remaining consistent throughout all plots. The trial was comprised of four simulated replant scenarios and a check consisting of the original stand. Excluding the check, all other plots were treated 14 days after peak emergence. The treatments were as follows.

1. Check plot: left as planted.
2. Simulated 100% crop loss: SelectMAX® herbicide applied across the entire plot and replanted on 4/20/09 at 36,000 seeds/A.
3. Simulated 30% crop loss: SelectMAX herbicide applied across a block of 30% of the plot and the block replanted on 4/20/09 at 36,000 seed/A.
4. Simulated poor stand with no replant: Stand thinned to 18,000 seeds/A and not replanted.
5. Simulated poor stand with interplant: Stand thinned to 18,000 seeds/A and the entire plot interplanted on 04/20/09 at 18,000 seeds/A.


#### Results

Yield results from the trial suggest that the corn products selected may be sensitive to optimum planting populations. Corn yields were reduced in both scenarios where corn stands were thinned to 18,000 seeds/A and either left at 18,000/A or interplanted with an additional 18,000 seeds/A. In the thinned and interplanted scenario, the poor plant spacing resulted in yield reductions caused by poor interception of light, nutrients, and water. In the 18,000 plant population, less competition within the row still did not make up for the number of fewer plants for grain production.

The check plot, which was planted at 36,000 seeds/A in early March, averaged a yield of 183 bu/A. Both simulated crop loss followed by a replant scenario yielded similar to the check plot. In the simulated 100% crop loss scenario, SelectMAX was applied to kill all corn seedlings and the entire plot was replanted on April 20<sup>th</sup>. When averaged across both corn products in the trial, the simulated 100% crop loss plot yielded the same as the check plot at 183 bu/A. For the simulated 30% crop loss scenario, SelectMAX was applied to kill all corn seedlings in a section equaling 30% of the total plot. This was then replanted on April 20<sup>th</sup>. The simulated 30% crop loss scenario yielded 189 bu/A when averaged across both corn products; 6 bu/A more than the check plot and the simulated 100% crop loss scenario.

Due to good late season finish and harvest conditions, both crop loss simulation scenarios were able to produce similar yields. This points out the potential for successful spot planting, which could also be applied to larger field areas such as corners, ends, and washes. While these areas may be successfully replanted, special consideration should be given to the area-specific agronomic management, inputs needed, and weather influences on the ultimate outcome.

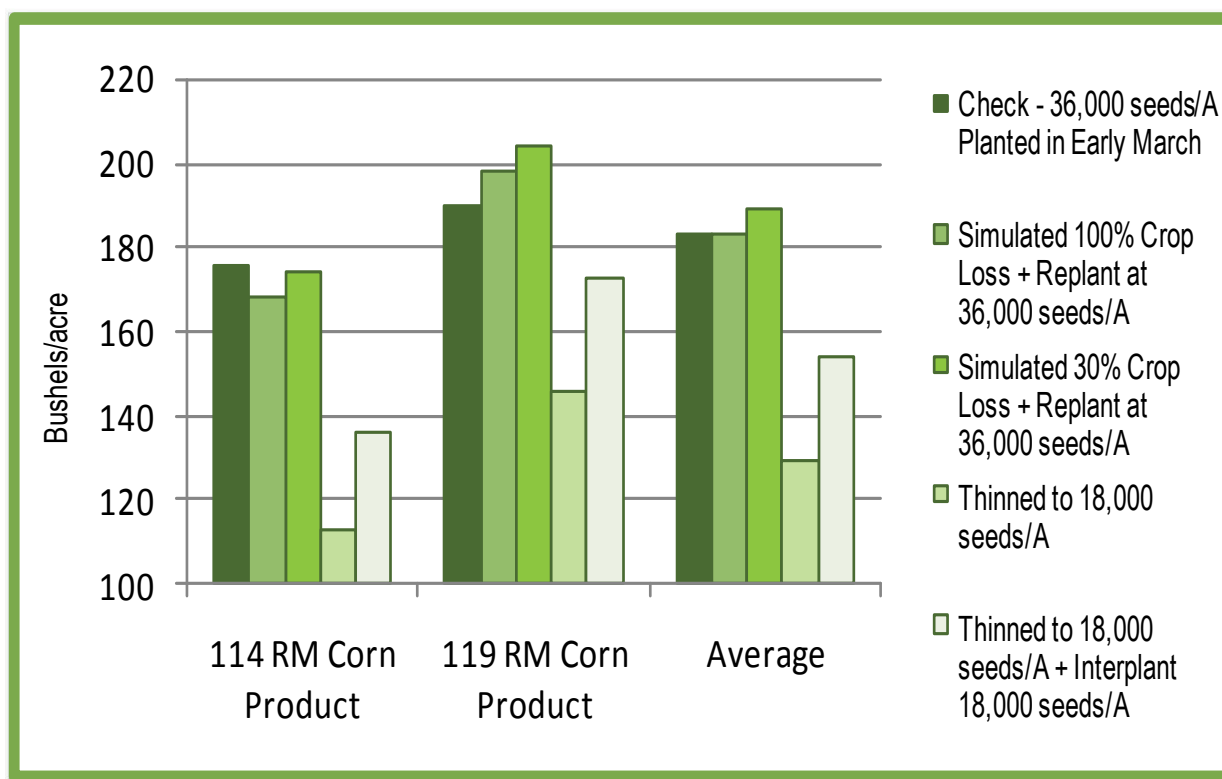
Overall, this one-year study showed corn yield may be more sensitive to the initial correct planting population and plant

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spacing than it is to variability in planting date. This study helps to demonstrate the importance of optimum stand establishment. Planting equipment should always be calibrated and checked to avoid any mechanical and/or seed placement errors. Seed treatments, adequate soil fertility, and planting into a favorable weather forecast can also help increase seedling survival. If replanting becomes necessary, to ensure proper plant spacing and uniform crop maturity, a burndown herbicide treatment should be applied to any surviving corn plants.

Replanting is time consuming and costly to producers, but it can be a viable agronomic practice given the right conditions. Careful consideration of the stand should always be taken before making the decision to replant.



**Chart 1.** Yield Results from 2009 Corn Replant Study

**Individual results may vary**, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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