AGRONOMY

BROADCAST SEEDING RATE REVISITED

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"RESEARCH EVALUATING THE YIELD COSTS ASSOCIATED WITH BROADCAST SEEDING IS OUTDATED. MANY PRODUCTION PRACTICES HAVE CHANGED SINCE RESEARCH WAS LAST CONDUCTED TO DETERMINE OPTIMUM BROADCAST SEEDING RATES."

Bobby Golden

Timely seeding is imperative to produce high yielding rice. Due to weather events in 2015, interest in broadcast seeding was generated in an effort to cover ground quickly due to time constraints and drill or planter availability. Research evaluating the yield costs associated with broadcast seeding is outdated. And current production practices have changed since the last optimum broadcast seeding rate research. Past data suggest that increasing the seeding rate by 30% would produce similar yield as drill planted rice. However, when the current recommendation was generated, the drill seeded rice recommendation was around 90 pounds

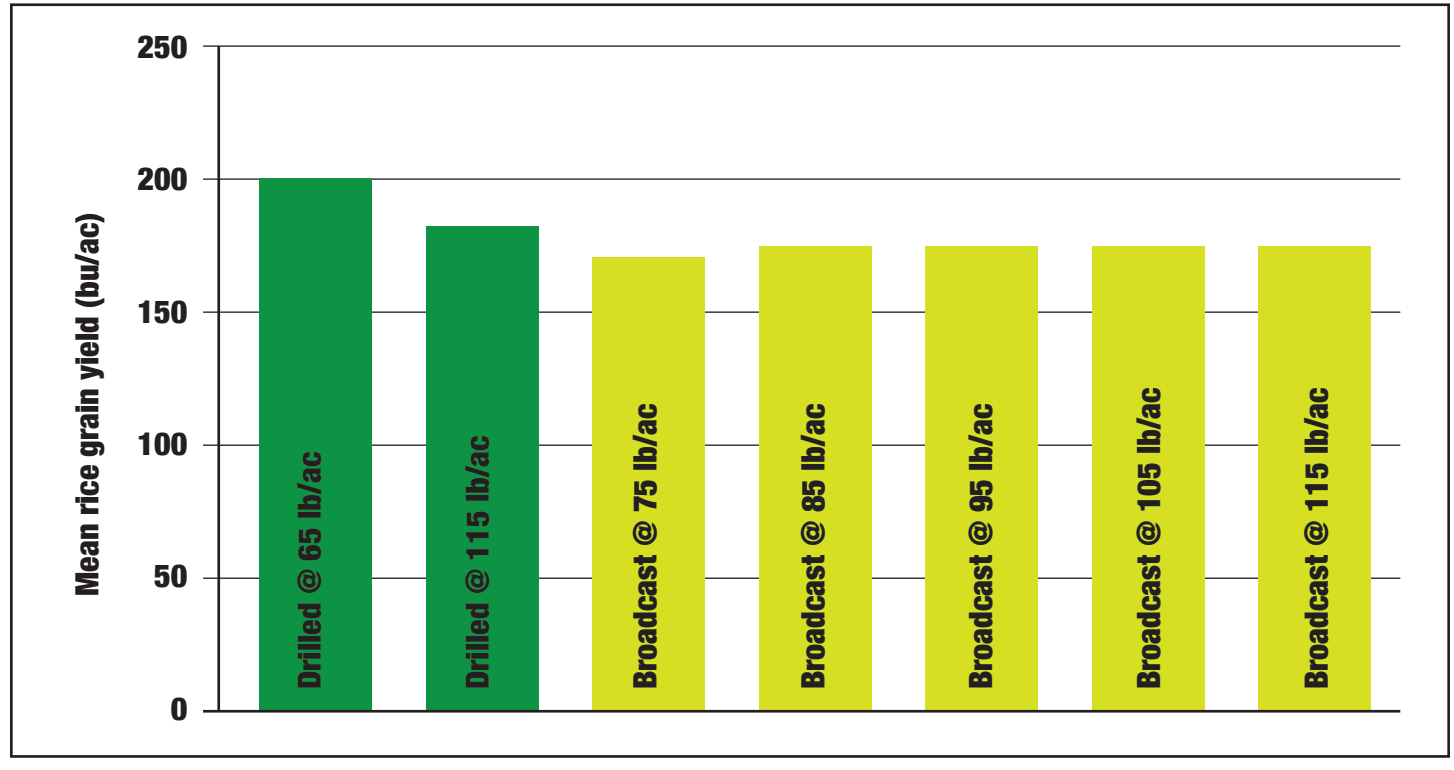

Figure 1. *Differences between drill and broadcast seeding rates on silt loam soils in Mississippi.*

seed acre^{-1}, today most non hybrid cultivars are seeded at 65 pounds seed acre^{-1}. Therefore research is needed to revisit the broadcast seeding recommendations.

In 2016, two trials (silt loam and clay soil) were established to determine the optimum broadcast seeding rate for rice. Treatments included two drill seeded rates (65 and 115 pounds seed acre^{-1}) and five broadcast rates ranging from 75-115 pounds seed acre^{-1}. The drill seeded rates represent the current industry standard for varieties and a 2x seeding rate. Broadcast seeding rates increase as a percentage of the current standard drill seeding rate. Broadcast seeded rice was shallow incorporated with a triple K harrow implement and drilled rice treatments were seeded approximately ¾" deep.

For silt loam soils, the greatest grain yield (200 bushels per acre^{-1}) was achieved with rice drilled at 65 pounds seed ac^{-1} (Figure 1). Rice grain yield across the range of broadcast seeding rates did not differ from one another and averaged 175 bushels per acre^{-1}. A differing response was observed on Sharkey clay soils. Drill seeded rice regardless of seeding rate yielded similar and greater than any broadcast seeding rate (Fig 2.). In general, for the clay soils as broadcast seeding rate increased, rice grain yield increased. Overall, preliminary work suggests that broadcast seeding rate recommendations need to be revised, and economic analysis is required to determine if broadcast seeding is a viable alternative to drill seeding.

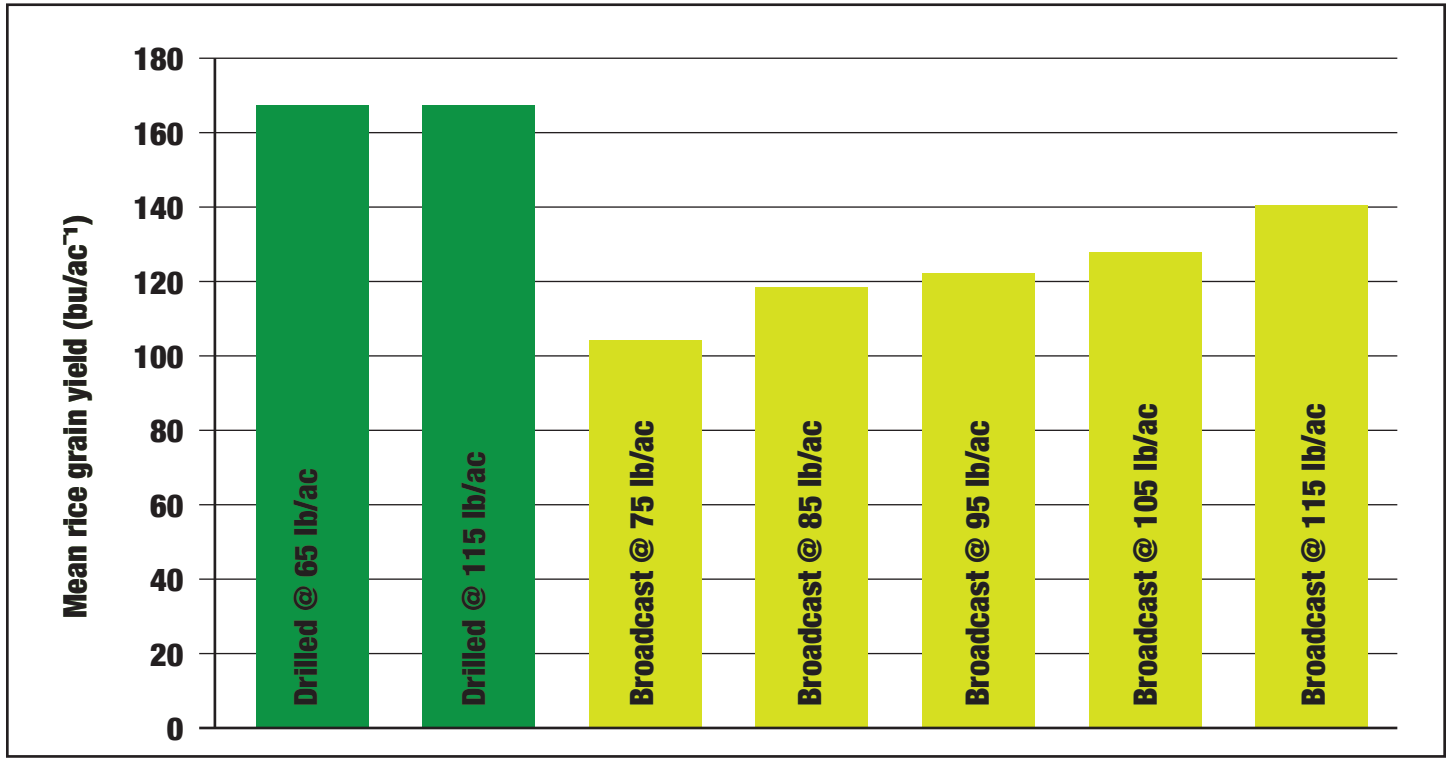

Figure 2. *Differences between drill and broadcast seeding rates on clay soils in Mississippi.*