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Evaluation of yield and economic loss due to twin row planter problems for soybean production in the mid-Southern United States

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Twin row planting has gained popularity among soybean producers in Mississippi and throughout much of the Mid-South, due to observed yield increases resulting from faster canopy closure than traditional single row production systems. The potential for errors during planting is present with all planters, but due to the planting configuration with the twin row pattern a number of unique errors can occur. The purpose of this study was to determine the effect of multiple potential twin row planting errors on soybean yield and profitability. Studies were established on two soil types, a heavy clay and a sandy loam, used for soybean production in Mississippi and across much of the Mid-South. Treatments included a single twin missing in one row, adjacent twins missing in two rows, both twins missing in a single row, and a correctly planted control with no errors. Economic analysis was conducted to determine the necessity of a replant decision for planting errors on both soil types. On the sandy loam soil both twins missing in a single row decreased yield by 8% compared to correctly planted soybeans. On the heavy clay soil both missing adjacent twin rows (8%) and missing both twins in a single row (13%) decreased yield compared to correctly planted soybean. In all cases yield decreases could be attributed to decreased light interception. Economic analysis suggests that a replant would only be economically feasible for both twin missing in a single row on the heavy clay soil.