Influence Of Maturity Group, Row Pattern And Seeding Rate On Soybean Grown On Silt Loam Soils

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Significant changes in the agriculture landscape have occurred in the lower Mississippi River Alluvial-flood plain. A large portion of silt loam soils have shifted from cotton to soybean production. Due to this change, research initiatives are focusing on several key agronomic issues associated with growing soybean on silt loam soils. This research focuses on the influence of row pattern (twin-row vs. 102 cm rows), maturity group (MG IV vs. V), and seeding rate across row pattern and MG. Because of the increased use of the twin row pattern in soybean production systems across the mid-south US, accurate data is needed concerning single versus twin row patterns and how these row patterns interact with maturity group and seeding rate. Six different seeding rates and a late MG IV and early MG V soybean variety were included. Stand count, plant height, NDVI, leaf area index, pod count, node count, seed weight, and yield data were collected in 2009 and 2010. Seeding rate influenced plant population whereas variety and row pattern had no affect on final stand populations recorded four weeks after emergence. As plant population increased, pods per plant also increased. Pod and node data were collected just prior to harvest. Seed rate had no influence on yield due to 'the plants' ability to compensate for lower plant populations. Both MG and row pattern significantly influenced yield. The early MG V variety yielded a mean of 85.6 kg ha-1, whereas the late MG IV variety yielded 69.2 kg ha-1. Row pattern contributed to yield differences as well; the twin row pattern enjoyed a mean of 81.2 kg ha-1, whereas the single row pattern had a mean of 73.6 kg ha-1. Higher NDVI values were collected from plants in the twin-row system and MG V variety. This MG and row pattern contribution to NDVI differences is due to the ability of the MG V variety to shade the row middles quicker and resulted in increased leaf area. These data will prove useful in providing lower Mississippi flood plain soybean producers assistance with agronomic decisions. Δ

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