EFFECT OF PLANTING DATE, SEEDING RATE, AND SEED SIZE ON COTTON GROWTH AND YIELD IN SOUTH CAROLINA Sarah Holladay Clemson University Pee Dee Research and Education Center Florence, SC

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<u>Abstract</u>

Previous research has indicated that seed size and seedling vigor are positively correlated. Having greater vigor in the early stages of plant development helps compensate for less-than-optimal planting conditions. Seeding rates and final plant populations are often specific to environment, variety, and grower preference. It is important for growers to understand their options pertaining to variety selection, seed size, planting date and seeding rates. The main objectives were to evaluate final plant population and seed size effects on cotton growth and yield, and to determine how planting date influences these factors. In 2020 and 2021, two seeds sizes, a large and a small, were planted at an early and late planting date at four seeding rates: 25k, 35k, 45k, ad 55k seed/acre. Field trials were conducted at the PDREC in Florence, SC, and the EREC in Blackville, SC. For data collection, germination tests, stand counts at 14 and 28 days after planting, biomass weights at the 1, 3, 5 and 7-leaf stages, plant heights, yield, and fiber quality data were obtained. There were no differences in lint yield for seeding rate, planting date, or seed size in 2020. However, in 2021, the small-seeded variety had higher lint yield in Florence, possibly due to a variety change between the two years. On average, the large-seeded variety had higher biomass weights, indicating greater seedling vigor. This study will be repeated in 2022 with the same varieties used in 2021 as more research on seed size, seeding rates, and planting date is needed.