

ECONOMIC ANALYSIS OF SEEDING RATE AND PLANTER DOWNFORCE IN SINGULATED AND HILL-DROP PLANTED COTTON

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Abstract

To be profitable at the end of the season, it is critical that cotton producers begin with successful stand establishment. Replanting can be extremely costly as cottonseed cost is around \$100-\$150 per acre. Selecting the correct planting parameters according to the field conditions and cotton varieties is crucial in ensuring high crop emergence, improving cotton productivity, and achieving higher economic profitability.

This paper is based on a study, which was conducted in 2018 to evaluate crop emergence and yield in cotton as affected by seed mass, seeding rate and planter downforce under singulated and hill-drop production scenarios. Two cotton varieties (a small seeded variety and a large seeded variety) were planted at 1-inch seeding depth using singulated and hill-drop methods. Three seeding rates (20,500, 29,000, and 42,500 seeds/acre) were used. Cotton was planted in a field under strip-till conditions. Planter downforce treatments consisted of 0 and 100 lbs. downforce values. Data of plant stand counts at one and three weeks after planting and yield data during harvest were collected. Economic profitability was calculated by considering the cost of cottonseed and market prices for cotton lint.

Results indicate that planter downforce selection is more important in achieving higher profitability when planting small seeded/low vigor varieties especially in less than ideal field conditions. There was no added yield and economic return advantage at higher seeding rates in both singulated and hill-drop planted cotton. Growers should be more attentive towards at-planting field conditions – careful selection of cotton variety, seeding rate and planter setup to maximize crop emergence, yield, and profitability.