MAKING THE REPLANT DECISION: UTILIZING AN AERIAL PLATFORM AND SURFACE REGRESSION MODELING

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Abstract

One of the most difficult, yet important decisions made each year when producing a cotton crop is determining whether to accept or replant an existing stand. One proposed use of unmanned aerial systems (UAS) is to produce quantitative data to support replant decisions by assessing plant stands. Theoretically, an aerial approach could provide spatially dense information on plant populations across large areas quickly and remove human bias to more accurately and precisely produce estimations. However, once determining the number of plants present in a given field, yield data may be required to further support accepting or rejecting a stand. Therefore, the scope is this study is to determine the effect of plant population and planting date on cotton yield by simulating replant scenarios and estimating yield potential through the use of surface regression modeling.