

## **Nitrogen fertilizer application timing in ‘beauregard’ sweetpotato**

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**Abstract.** Although sweetpotato storage root production is acceptable without supplemental nitrogen (N) fertilization, yields are only a fraction of the yield potential for certain cultivars. Incremental rates of fertilizer N application generally result in proportional increases in storage root yield up to a certain level of N. In certain situations, the addition of fertilizer N does not elicit any yield response. This lack of yield response to a range of fertilizer N is attributed to several factors including microorganism activity, differences in N mobilization and immobilization, leaching, dinitrification, volatilization, residual N, cultivar effects, and application timing. Application timing, including split applications may increase N use efficiency and possibly achieve yield response with added N. Evaluation of the response of ‘Beauregard’ to seven application timing treatments (50 kg·ha<sup>-1</sup> pre-plant, split [25 kg preplant+25 kg 28 days after transplant, DAT], 21, 28, 35, and 45 DAT) indicate that split application had the highest U.S. No. 1 storage root yield, resulting in 25% and 38% increase over pre-plant and 0 N applications, respectively. This was followed by 21 DAT (20%, 33%) and 28 DAT (3.4%, 9.8%). Applications at 35 and 45 DAT generally resulted in yield reduction (-10%, 8%) and (-32%, -9%), respectively. The results show that application timing suggests a more efficient use of N fertilization in ‘Beauregard.’ Application beyond 28 DAT generally results in yield reduction. The results provide growers with management options that increase fertilizer N efficiency.