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Module 5.1-9 Early nitrogen application is important for cassava yield in Hainan, China.

There was lack of information on proper timing of fertilizer nitrogen (N) application to cassava in south China. Thus, a field trial was conducted for this purpose. The soil in study had rather low soil fertility with pH 5.3, organic matter content 7.0 g/kg, total N 0.03%, available phosphorus (P) 21 mg/kg, and available potassium (K) 97 mg/kg. The results revealed that timing of fertilizer N application significantly affected cassava growth, tuber number per plant and tuber yield (**Table 1**). All figures of the agronomic traits were decreased with a delay in fertilizer application timing. That is, the later the fertilizer application time, the lower the growth rate and tuber yield. In addition to a basal application of P at 45 kg P₂O₅/ha and K at 180 kg K₂O/ha, splitting applications of the N fertilizer at a rate of 90 kg/ha into twice at 30 and 60 days or four times at 30, 60, 90, and 130 days after seeding produced equivalent tuber yield as the one time application at 30 days. Splitting application of the fertilizers at later growth stages (90 and 130 days) significantly reduced cassava tuber yield. The results indicate that making at least some N available at early growth stage (30 days in this case) is crucial to cassava growth and high yield on soils of low-to-medium fertility in the region.

Table 1. Cassava growth and yields as affected by N fertilizer timing in Hainan, China.

Fertilizer timing - days after seeding (times)	Plant height, cm	Tubers/plant	Yield, t/ha
30 (once)	214 a	11.8	27.2 a
60 (once)	191 b	9.0	24.8 b
90 (once)	189 b	8.5	24.2 b
130 (once)	163 bc	7.9	22.0 b
30, 60 (twice)	195 ab	11.1	27.5 a
90, 130 (twice)	170 b	9.7	23.7 b
30, 60, 90, 130 (4 times)	185 b	10.2	27.5 a
CK (no fertilizer)	138 d	8.5	14.5 c

Numbers followed by the same letter do not differ significantly ($p < 0.05$).

References

Zhang, W.T. 1990. J. Tropical Crops 1: 49-53.

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