

Canopy Dynamics of two "Climate-Smart" Cassava Varieties under Drought in SW Nigeria

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INTRODUCTION

Cassava (*Manihot esculenta*) is a major staple in Nigeria and elsewhere in sub-Saharan Africa where it is grown without irrigation. However, the estimated yield gaps between those obtained on farmers' fields (~12 Mg ha⁻¹) and on research stations (up to 60 Mg ha⁻¹) remain high.

There little information about yield determinants and the impacts of the dry season on growth, leaf area development, senescence, and biomass partitioning of the cassava plant and how these impacts vary between variety and with fertilizer application.

OBJECTIVES

- Ascertain constraints and strategies towards improving cassava production
- Assess the effect of water deficiency on two cassava varieties (TMEB 419 & IITA-TMS-IBA980581)
- Assess the relationship between cassava senescence with yield in the two varieties



METHODS

- Factorial experiment : 2 drought-tolerant varieties of cassava (TMEB 419, IITA-TMS-IBA980581),
- 2 Fertilizer treatments: 0 control, 75 kg N ha⁻¹ and 20 kg P ha⁻¹ with 90 kg K ha⁻¹ elemental application rates
- 4 blocks in Moniya, South-West Nigeria.
- Assessment of leaf senescence using frames & leaf area assessments using a ceptometer at 26 – 31 weeks after planting, Measurements made 1 month after the dry season started.

PRELIMINARY RESULTS

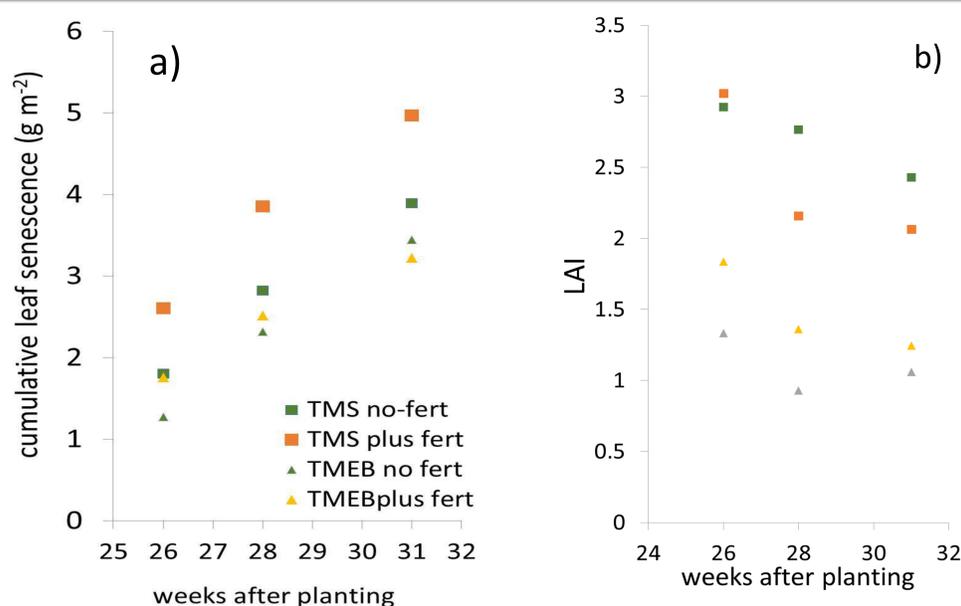


Fig 1a Cumulative leaf senescence and b) LAI of 2 cassava varieties +/- fertilizer during the dry season in SW Nigeria

PRELIMINARY CONCLUSIONS

- Preliminary observations show IITA-TMS-IBA980581 had a higher LAI than TMEB 419 throughout the dry season despite higher leaf senescence
- Fertilizer application had differential effects in the two varieties increasing LAI in TMEB 419 yet reducing both LAI and leaf senescence in IITA-TMS-IBA980581 .
- Further analysis is underway and relationships with yield being investigated

- HAFL for Sponsoring my trip to Nigeria
- Bill and Melinda Gate Foundation for Sponsoring the ACAI project
- Agrinatura for Sponsoring me to Tropentag
- IITA Ibadan, Nigeria for providing onsite assistance during data collection