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***Full Length Research Paper***

## **Weather and seasonal effects on growth, seed yield and soluble carbohydrate concentrations in selected maize cultivars in the humid areas of Nigeria.**

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### **Abstract**

A study was conducted in 2001 and 2002 to identify genotypic attributes relevant to performance and adaptation of ten maize cultivars grown on the field in the rainy and in the late seasons (terminal drought situation) in a humid zone of Nigeria. Data were collected on shoot biomass and seed yield and on leaf tissue concentrations of chlorophyll a and b and water soluble (non-structural) carbohydrate in the maize cultivars evaluated. Significant cultivar and seasonal effects on growth duration, dry matter production, assimilate reserves and seed yield in the cultivars of maize were obtained. In general, late maturing varieties of maize produced higher seed yield than the early maturing varieties, and when both were sown in the rainy season, they produced larger seed yield than the late season crop. Lower values of chlorophyll concentrations in leaf tissues were obtained for late season maize, but non-significant differences were found for late and early maturing cultivars. Although, the concentrations of non-structural carbohydrates were higher in dry season maize compared to rainy season crop, however, the increased intensities of drought and temperatures during the reproductive phase in the late season could have reduced kernel number (sink size) in the maize cultivars.

**Key words:** Maize, soluble carbohydrate, chlorophyll, yield, cropping seasons, tropics.

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