



## THE GROWTH AND DEVELOPMENT OF TWO QUALITY PROTEIN MAIZE (*Zea mays* L.) VARIETIES AS INFLUENCED BY NITROGEN AND SULFUR FERTILIZERS AT SAMARU

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### ABSTRACT

A three years field trial was conducted from 2006-2008 wet seasons, at the Institute for Agricultural Research Farm, Samaru in the Northern Guinea savanna of Nigeria (11° 11' N; 07° 38' E; 686 m asl). The aim was to determine the effects of nitrogen and sulfur fertilizer rates on quality protein maize (QPM) varieties. The treatment factors were N, S fertilizers with (0, 60, 120 and 180 kg N/ha) and (0, 5, 10 and 15 kg S/ha) respectively and two QPM varieties (Obatanpa and EV – 99), laid out in a split plot design with variety and nitrogen in the main plots and sulfur in the sub plots and replicated three times. The results show that varietal differences and application of nitrogen and sulfur influenced both crop growth rate (CGR) and relative growth rate (RGR) in 2007 and 2008, while sulfur had no effect. Net Assimilation Rate (NAR) was not affected by varietal differences, but nitrogen and sulfur application influenced NAR in almost all the three years. The study revealed that EV – 99 was better compared to Obatanpa. 120kg N/ha, 10 kg S/ha and Obatanpa variety are the best combination for high growth and development of QPM in the northern Guinea savanna ecological zone of Nigeria.

**Keywords:** Quality protein maize, nitrogen, sulfur, fertilizer, growth and development

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