

**OPTIMUM PLANT DENSITIES FOR SOYBEAN (*Glycine max* (L.) Merril.) AND SESAME (*Sesamum indicum* L.) IN MAIZE-BASED INTERCROPPING SYSTEM IN SOUTH-WESTERN NIGERIA**

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**ABSTRACT**

Field experiments were carried out in 1998 and 1999 at the Teaching and Research farm of University of Agriculture, Abeokuta (7°15'N, 3°25'E) located in the forest-savanna transition zone of south-western Nigeria during the late cropping season (June–November) to determine the optimum populations of soybeans (Samsoy 2) and sesame (E8) intercropped with maize (SUWAN-1-SR) and the production effectiveness per unit land area from the various cropping systems. Intercropping soybeans with maize resulted in reduction of number of pods, seeds and weight of seeds per plant relative to the sole crop of soybeans. Sesame seed weight per plant increased significantly ( $P < 0.05$ ) as its population reduced in the cropping systems. Maize intercropped with 50% soybeans recorded the highest ear diameter and kernel row number. Intercropping reduced maize grain yield by 36–66 % in 1999 relative to the sole crop. Sole soybeans produced significantly ( $P < 0.05$ ) higher grain yields than those intercropped with maize at 50% of its population in both years. Cropping systems did not affect the grain yield of sesame significantly, even though it increased as its population reduced in the systems. On the average, maize + soybeans (100%) and maize + sesame (75%) gave the largest LERs. Consequently, soybeans and sesame at 100 and 75% population densities appeared optimal for intercropping with maize in the forest–savanna transition zone of south western Nigeria.

**Keywords:** density, intercropping, maize, sesame and soybeans.