Pollination methods are constantly being used by maize breeders in the development of new improved maize varieties. However, little or no information is available on how these methods affect the quantity and quality of seeds. Therefore, the objectives of this study were to determine the effect of pollination methods on the seed quality and yield of progenies from an early-maturing maize population and determine the relationship between seed quality and grain yield of the different progenies.

**Hypothesis**

Seeds produced from self, half and bulk sibs pollination methods vary considerably in their quantity and quality.

**Materials & Methods**

Progenies were developed with three controlled manual pollination methods; self, half-sib, and bulk-sib from a yellow endosperm maize population at the Teaching and Research Farm, Obafemi Awolowo University, Ile-Ife, Nigeria, in the late cropping seasons of 2013 and 2014. Evaluations of the progenies developed by the three methods were carried out in the laboratory and on the field.

**Results**

Self and bulk-sib pollination methods produced significantly higher seed number and weight for progenies developed in 2013 while self-pollination method produced the highest seed number and weight in 2014 with bulk-sib pollination method producing the lowest seed number and weight (Table 1). In 2013, both half-sib and bulk-sib seedlings produced significantly more root number than the selfed progeny seedlings (Table 2). For seedling vigor test, root fresh weight (RFW) and root dry weight (RDW) obtained from bulk-sib seedlings generated from 2013 were significantly lower than those of selfed and half-sibs while in 2014, bulk-sib seedlings had the highest RFW and half-sib seedlings gave the lowest (Table 2). Progenies from selfed pollination methods takes longer days to flower (Fig. 1) while half and bulk sib progenies recorded lower plant and ear aspect (Table 3). Selfed progenies had short plant and ear heights (Table 3). Progenies from half-sib and bulk-sib pollination methods produced significantly higher grain yield (Fig. 2) and yield components than self-pollinated progenies as reported in previous studies (Noor et al., 2010; Nazir et al., 2012, Kaleem et al., 2013). There was no significant relationship between seed quality and grain yield of the different progenies (Table 4).

**Conclusion**

Self pollination method produced the highest number of seeds while bulk-sibs pollination method produced seedlings that are more vigorous. Bulk-sib and half sib progenies produced higher grain yield than the selfed progenies. There was no relationship between seed quality and grain yield of the different progenies.

**References**

