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## Determination of the Optimal Harvesting Stage of African Nightshade (*Solanum* spp) Seeds

NOELLA EKHUYA<sup>1</sup>, MARY ABUKUTSA-ONYANGO<sup>2</sup>, JOHN WESONGA<sup>3</sup>

<sup>1</sup>*Jomo Kenyatta University of Agriculture and Technology, Department of Horticulture, Kenya*

<sup>2</sup>*Jomo Kenyatta University of Agriculture and Technology, Dept. of Horticulture, Kenya*

<sup>3</sup>*Jomo Kenyatta University of Agriculture and Technology, Dept. of Horticulture, Kenya*

### Abstract

Nightshade (*Solanum* species) is a priority African indigenous vegetable of great importance, it plays a significant role in nutrition, food security and income generation. Much research attention on nightshade has focused on leaf yields, nutritional value, agronomic practices and post-harvest handling. However, African nightshade production is majorly constrained by lack of quality seeds occasioned to methods of seed harvesting processing and storage. This study sought to determine the optimal stage of harvesting nightshade seeds. To determine the optimal stage for harvesting nightshade seeds, ten African nightshade seeds from selected varieties were planted in the field at Jomo Kenyatta University in a Complete Randomised Block Design, raised to maturity and seeds harvested at two different maturity stages; mature green and ripe stage. Laboratory tests on seed germination, vigour and viability were carried out. The mean germination for seeds harvested at the mature green stage was significantly lower ( $p < 0.001$ ) compared to seeds harvested at the ripe stage. The germination percentage of seeds varied significantly  $p < 0.01$  among the ten accessions with seeds harvested at the ripe stage having the highest germination percentage (98.75 %). The viability of seeds in both the treatments were higher compared to the germination percentages among the accessions and the two treatments. However there was a significant difference ( $p < 0.001$ ) in the mean viability of seeds between the two treatments mature green and ripe stage. Variations in seed vigour among the ten accessions in both mature green seeds and ripe stage seeds were significant ( $p = 0.005$ ). Seeds harvested at the ripe stage showed better qualities in terms of seed germination, vigour and viability. Therefore the optimal stage of harvesting nightshade seeds is at the ripe stage.

**Keywords:** Nightshade, seed quality