



Effect of drying temperature and conservation conditions on seed viability and seedling vigour in oleaginous gourd (*Lagenaria siceraria*)

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ABSTRACT

Objectives: Production of high agronomic quality seeds is a prerequisite for improving the productivity of oleaginous *Lagenaria siceraria*. This study aimed at testing the effect of drying temperature and storage conditions on seed germination and seedling vigour of both oilseed cultivars “round-fruited” (RFC) and “blocky-fruited (BFC) of this species.

Methodology and Results: Seeds of both cultivars (RFC and BFC) were dried at three different temperatures (16, 30 and 40° C), then stored under 6 conditions [-18°C, 4°C, control at room temperature (RT: 24-30°C);, ash + RT, smoking (50 to 60 ° C) once / week + RT and smoking (50 to 60°C) twice / week + RT] for four durations (0, 2 , 4 and 6 months). Seeds from these 18 treatments were sown for viability and vigour tests. The results showed that drying temperature significantly reduced the seeds moisture content (from 8.93 to 7.14 %) while increasing seedlings vigour. Moreover, the relatively high initial viability (about 85%), confirmed the orthodox nature of *L. siceraria* and indicates that drying temperature can fluctuate between 16°C and 40° C without damage to the seed embryo. Dried seeds viability and seedling vigour globally decreased slightly during the 6 months of storage. However this decline level was low at low storage temperature (-18°C and 4°C), mean at RT especially in presence of ash and fast with smoking (50 to 60°C).

Conclusions and application of findings: the seeds of both cultivars (RFC and BFC) can be dried at RT that is harmless for their embryo. In order to slow down seed viability loss and seedlings vigour decline over time, these seeds must be stored at low temperature (-18°C and 4°C) or at least in the presence of ash at RT in rural areas but never above the kitchen chimneys that produces too hot smoke (50 to 60° C).

Key words: *Lagenaria siceraria*, drying temperature, conservation, viability and vigour