

Oil palm (*Elaeis guineensis*) seed dormancy type and germination pattern

ABSTRACT

This study aimed to evaluate seed dormancy type and germination pattern for oil palm seeds. Physical dormancy tests included imbibition of intact, scarified and heat-treated seeds to determine percentage of mass increase over time. Seeds were stored at room temperature for 32 weeks to monitor embryo growth and seed germination. Physiological dormancy was evaluated by pre-soaking the seeds in $150 \text{ mg L}^{-1} \text{ GA}_3$. Results showed that the seeds were unable to imbibe water. Morphological tests on seeds at room temperature indicated that an embryo length of 3.64 or 3.03 mm was required to initiate germination in *tenera* × *tenera* (T × T) and *dura* × *pisifera* (D × P) seeds, respectively. Heat treatment accelerated embryo growth, regardless of treatment duration. Application of exogenous GA_3 did not significantly increase germination. The seeds recorded higher germination at 30°C compared with room temperature. Oil palm embryo growth potential increases with time to overcome mechanical resistance of the endosperm micropylar region. The embryo growth (length) greater than 13% is required to commence germination. Results indicate that oil palm seeds have a combination of both morphological and physical dormancy.

Keyword: Oil palm; *Elaeis guineensis*; Seed dormancy type; Germination pattern