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Effect of Seed Treatments on Seed Germination of *Madhuca longifolia* ("Mee") Seeds

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Madhuca longifolia (Sinhala: Mee) is a forest tree with high reforestation potential in the Dry zone of Sri Lanka. Seasonality in seed production and lack of plant production are drawbacks of this species. Experiments were designed to overcome these by *ex vitro* and *in vitro* methods. Mechanically scarified seeds under *ex vitro* conditions showed maximum germination (90%), while treatments with 100 ppm gibberellic acid (GA₃), distilled water (DW), and 2% potassium nitrate (KNO₃) resulted in higher germination (GA₃ - 75%; DW - 70%; KNO₃ - 70%) than the control (66%) after one month. The highest shoot growth was observed for GA₃, KNO₃ and DW (8.3, 8.6 and 8.5 cm, respectively) treatments, while rooting was not affected by any of the treatments. *In vitro* germination was tested on liquid Murashige and Skoog (MS) media with different benzylaminopurine (BAP) concentrations after removing the seed coat and sterilization with 5% (v/v) NaOCl for 5 minutes followed by 0.1% (w/v) HgCl₂ for another 5 minutes. The germination percentage of half-strength MS medium with 1.0 mg/L BAP (84%) and half-strength MS with 0.5 mg/L BAP (78%) was higher than the media without any growth hormone. *M. longifolia* has seed coat dormancy that can be overcome efficiently by mechanical scarification at the early stages after seed harvest. Seeds were germinated under *in vitro* conditions with half MS combined to 0.5 mg/L of BAP for *in vitro* multiplication studies.

Key words: Dormancy, *Ex vitro*, *In vitro*, *Madhuca longifolia*, Seed germination

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