

**SOMATIC EMBRYO INDUCTION AND NODULATION OF
MANGOSTEEN VARIETY PUSPAHIANG ON MS MEDIA WITH THE
ADDITION OF VARIOUS CARBOHYDRATE SOURCES AND GROWTH
REGULATORS**

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ABSTRACT

Mangosteen is a horticultural plant with multiple health benefits obtainable from all its parts. However, there exist numerous obstacles in the cultivation process, making it essential to propagate seeds using the correct techniques. One of the alternatives for mangosteen seed propagation is the induction of somatic embryos and nodulation. The study's objective was to evaluate the impact of utilizing a combination of honey or sucrose with growth regulators 2,4-D and BAP on the somatic embryo induction and nodulation of mangosteen, the optimal treatment concentration, and the phase of somatic embryo induction, as well as determine the nodulation results' bud's formation. The experiment was conducted at Laboratory of Biotechnology, Faculty of Agriculture Siliwangi University from September 2022 to February 2023. The study used a completely randomized design (CRD) comprising six treatments and four replications, were A (honey 3% + 2,4-D 3 mg/L + BAP 1 mg/L), B (honey 6% + 2,4-D 2 mg/L + BAP 2 mg/L), C (honey 9% + 2,4-D 1 mg/L + BAP 3 mg/L), D (sucrose 3% + 2,4-D 3 mg/L + BAP 1 mg/L), E (sucrose 4% + 2,4-D 2 mg/L + BAP 2 mg/L), dan F (sucrose 5% + 2,4-D 1 mg/L + BAP 3 mg/L). The result showed all treatments gave statistically significant differences in the number of nodules, the number of nodular buds, the number of globular phase somatic embryos, and the percentage of embryogenic callus. Sucrose concentration of 5% + 2,4-D 1 mg/L + BAP 3 mg/L, revealed best effect on the somatic embryo induction phase and nodulation process, formed 29 globulars, 4 hearts, and 1 torpedo embryo, as well as 30,21 nodules per explant and 3,96 nodular buds per explant.

Keywords: carbohydrate, growth regulator, mangosteen, nodulation, somatic embryogenesis.