

# Increased Efficiency Mikropropagasi with Addition of Organic Materials In Vitro Culture Medium *Dendrobium Orchids and Rhyncostylis*

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## ABSTRACT

*Rhyncostylis* and *Dendrobium* orchid are high economic value plants. Not only have a beautiful and fragrant flowers, they also used as traditional medicine. The purposes of this study are determine the stage of growth and development of the orchid's embryo and determine the concentration of organic matter (coconut water, banana extract, and tomato extract) that is optimum to improve the micropropagation efficiency.

This study is divided into two steps: determining the concentration of coconut water (0, 50, 100, 150, 200, or 250 ml.L<sup>-1</sup>) and determining the optimum concentration combination of coconut water (the optimum concentration yielded from the first steps) and banana or tomato extract (0, 50, 100, 150, 200 g.L<sup>-1</sup>). Growth and development stages is determined by observation of 0 to 6 weeks after sowing (was) embryo. Micropropagation efficiency is measured by calculating the percentage of advanced growth, early growth, doesn't grow, and died embryo. High efficiency demonstrated by the highest percentage of advanced growth embryos at 6 was.

The observation of the growth and development embryo shows there are 6 stages of embryo growth and development from 0-6 was. The addition of 150 ml.L<sup>-1</sup> coconut water in medium providing the optimum growth and development of *Rhyncostylis retusa* (39% of advanced and only 0,2 % of dead embryo/protocorm).

Kata Kunci: *micropropagation, in vitro culture, organic materials, Rhyncostylis retusa, Dendrobium antenatum*