Optimization of Sterilization Using Various Concentrations and Durations of Clorox Immersion on the In Vitro Growth of Porang Plants

(*Amorphophallus muelleri* B.)

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ABSTRACT

The porang plant (*Amorphophallus muelleri* B.) has high economic value due to its glucomannan content, which is useful in the food and pharmaceutical industries. High export demand for porang cannot be met due to a shortage of high-quality seeds. Tissue culture is a solution for mass propagation, but its success is highly dependent on the appropriate method of explant sterilization. This study aims to determine the optimal combination of Clorox concentration and immersion time for in vitro sterilization of porang plants. This study used a completely randomized design (CRD) factorial with two factors: Clorox concentration (20%, 30%, 40%) and immersion time (10, 15, 20 minutes), resulting in 9 treatment combinations with 3 replicates. The parameters observed included the percentage of sterile and live explants, the time of sprouting, the number of sprouts, and the height of the sprouts. The results showed that a Clorox concentration of 30% had a significant effect on the time of sprouting (11.00 HST) and the height of the sprouts (0.775 cm). The duration of immersion had a significant effect on the percentage of sterile and viable explants (68.29%). There was no interaction between the two factors on any of the observed variables, indicating that the concentration and duration of immersion worked independently. The number of shoots showed uniformity (1.45-1.58 shoots/explant).

Keywords: *Clorox, in vitro culture, soaking time, porang, sterilization.*