

ABSTRACT

Patchouli (*Pogostemon cablin* Benth.) is a plant that has many benefits but doesn't flower or produce seeds. This research aimed to determine the most appropriate concentrations of BAP and IAA for the propagation of patchouli microcuttings, to determine the most appropriate concentrations of paclobutrazol and sucrose for *in vitro* conservation, and to obtain information on the estimated duration of *in vitro* conservation of Aceh Patchouli. Research I (microcuttings) used a two-factor completely randomized design (CRD). The first factor was IAA concentration, namely I0 (0 mg/l) and I1 (0.5 mg/l), and the second factor was BAP concentration, namely B0 (BAP 0 ppm), B1 (BAP 1 ppm), B2 (BAP 2 ppm), and B3 (BAP 3 ppm). Research II (*in vitro* conservation) used a two-factor completely randomized design (CRD). The first factor was Paclobutrazol, with concentrations of P0 (0 mg/L), P1 (1 mg/L), P2 (2 mg/L), and P3 (3 mg/L), and the second factor was sucrose concentration, with levels of S0 (MS + No Sucrose), S1 (Sucrose 1.5%), and S2 (Sucrose 3%). The results of research I showed that the concentration of IAA 0.5 mg/l was the best concentration for the propagation of Aceh patchouli microcuttings. The concentration of BAP 0 ppm was the best concentration for the propagation of Aceh patchouli microcuttings. There was an interaction between the concentration of IAA and the propagation of Aceh patchouli microcuttings. The concentration of IAA 0.5 mg/l and BAP 0 ppm showed the highest results in terms of shoot growth percentage, number of shoots, shoot height, and number of leaves. Research results II showed that the concentration of paclobutrazol 1 mg/l is the most appropriate concentration for the *in vitro* conservation of Aceh patchouli. The concentration of sucrose 0% is the best concentration for the *in vitro* conservation of Aceh patchouli. There was an interaction between paclobutrazol and sucrose concentrations that influenced the growth of Aceh patchouli planlets *in vitro*. The best results were obtained at a paclobutrazol concentration of 2 mg/l and without sucrose, which is estimated to extend the storage period with an estimated conservation time of 103,46 month (8,6 years).

Keywords: BAP, conservation, IAA, microcuttings, propagation.