

ABSTRACT

Patchouli (*Pogostemon cablin* Benth.) is a plant that produces essential oil with characteristics do not have seeds as generative reproductive organs, and all of them growth with vegetatively. Seedling propagation through tissue culture can be a solution to produce seedlings in a short time. Plant growth regulators such as auxins and cytokinins are important for controlling biological processes in plant tissues. This study was conducted to determine the best combination of Kinetin and NAA treatments for *in vitro* propagation of patchouli plants. This study used a completely randomized design (CRD) with two factors and 10 replicates per treatment combination. The first factor was the concentration of Kinetin, consisting of three levels: K0 (0.0 mg/L), K1 (0.75 mg/L), and K2 (1.5 mg/L). The second factor was the concentration of NAA, consisting of three levels: N0 (0.0 mg/L), N1 (1.0 mg/L), and N2 (2.0 mg/L). The results showed that Kinetin treatment affected Aceh patchouli microcuttings *in vitro* in shoot height, number of leaves at 4 WAP, root growth time, and number of roots. Kinetin with concentration of 0.75 mg/L was the best treatment. The NAA treatment affected the variables of shoot growth percentage at 2-8 WAP, shoot growth time, number of shoots at 2-8 WAP, shoot height, number of leaves at 2-8 WAP, root growth time, and number of roots. The NAA treatment at a concentration of 0.0 mg/L was the best treatment. There was an interaction between Kinetin and NAA concentrations on the variables of survival percentage at 6-8 WAP, sprout growth percentage at 4 WAP, sprout growth time, number of sprouts at 3-8 WAP, and number of roots. The best treatment was the application of Kinetin at a concentration of 0.75 mg/L + NAA at 0.0 mg/L.

Keywords: Auxins, Cytokinins, Plant Growth Regulators, Explant, Patchouli Variety Lhokseumawe