

**Larasati, 2019. Pengaruh Konsentrasi Metil Jasmonat Terhadap Biomassa dan Kadar Saponin Akar Adventif Ginseng Jawa (*Talinum paniculatum* Gaertn.). Skripsi ini di bawah bimbingan Prof. Dr. Y. Sri Wulan Manuhara, M.Si. dan Dr. Edy Setiti Wida Utami, MS. Program Studi S1-Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.**

---

#### ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian variasi konsentrasi metil jasmonat terhadap biomassa dan kadar saponin pada akar adventif ginseng Jawa (*Talinum paniculatum* Gaertn.) serta mengetahui konsentrasi yang paling baik untuk meningkatkan biomassa dan kadar saponin pada akar adventif ginseng Jawa. Pada penelitian ini digunakan daun ginseng Jawa untuk menginduksi akar adventif. Akar diinduksi pada media MS + IBA 2 mg/L selama 3 minggu lalu dilakukan subkultur ke media perlakuan dengan berbagai konsentrasi metil jasmonat yaitu 0  $\mu\text{M}$ , 50  $\mu\text{M}$ , 100  $\mu\text{M}$ , dan 150  $\mu\text{M}$ . Eksplan dikultur selama 2 minggu. Parameter yang diamati adalah lama waktu terbentuknya akar, jumlah akar yang terbentuk, panjang akar, berat segar akar, berat kering akar, dan kadar saponin. Hasil pengamatan menunjukkan bahwa akar adventif dengan perlakuan konsentrasi metil jasmonat 50  $\mu\text{M}$  memiliki rata-rata berat segar akar tertinggi, yaitu sebesar 23,9 mg dan rata-rata berat kering akar tertinggi sebesar 4,13 mg. Pengujian KLT menunjukkan bahwa noda saponin paling gelap (tebal) daripada perlakuan lainnya terbentuk pada perlakuan metil jasmonat 100  $\mu\text{M}$  dengan luas noda 0,283  $\text{cm}^2$ . Pemberian variasi konsentrasi metil jasmonat tidak berpengaruh pada berat segar akar adventif namun berpengaruh pada berat kering dan kadar saponin akar adventif ginseng Jawa.

Kata kunci : akar adventif, ginseng Jawa, kadar saponin, metil jasmonat.

**Larasati, 2019. The Effect of Methyl Jasmonate Concentration on the Biomass and Saponin Content in Adventive Roots of Javanene Ginseng (*Talinum paniculatum* Gaertn.). This Thesis is Under Guidance of Prof. Dr. Y. Sri Wulan Manuhara, M.Si. and Dr. Edy Setiti Wida Utami, MS. Bachelor Biology Study Program, Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.**

---

#### ABSTRACT

This research was aimed to determine the effect of various methyl jasmonate concentration on biomass and saponin levels on adventitious roots of Javanese ginseng (*Talinum paniculatum* Gaertn.) And to determine the best concentration to increase biomass and saponin levels in adventitious roots of Javanese ginseng (*T. paniculatum* Gaertn. ) In this study, Javanese ginseng leaves were used to induce adventitious roots. Roots induced on MS + IBA 2 mg/L for 3 weeks then subculture into treatment media with various concentrations of methyl jasmonate; 0  $\mu$ M, 50  $\mu$ M, 100  $\mu$ M, and 150  $\mu$ M. Explants were cultured for 2 weeks. The parameters observed were root growth time, number of roots formed, root length, fresh root weight, dry root weight, and saponin content. The results showed that the adventitious roots treated by 50  $\mu$ M methyl jasmonate had the highest average of fresh root weight, that is 23.9 mg and 4.13 mg as the highest average of dry root weight. On TLC test showed that the darkest (thickest) saponin stain compared to other treatments can be found on 100  $\mu$ M methyl jasmonate treatment with the area of stain 0.283 cm<sup>2</sup>. The various concentration of methyl jasmonate has no effect on the fresh weight of adventitious roots but has an effect on dry weight and saponin levels of adventitious roots of Javanese ginseng.

Keywords : adventitious roots, Javanese ginseng, methyl jasmonate, saponin levels.