ABSTRAK

Asri Sinurat, NIM 4213220003 (2025).Pengaruh Pemberian Zpt 2,4 D-*Diclorophenoxyacetic Acid* (2,4-D) dan 6-*Benzyl Amino Purine* (BAP) Terhadap Kultur Kalus Ciplukan (*Physalis Angulata* L.) Secara *In Vitro.*

Penelitian ini bertujuan mengetahui pengaruh pemberian zat pengatur tumbuh 2,4-*Dichlorophenoxyacetic Acid* (2,4-D) dan 6-*Benzyl Amino Purine* (BAP) terhadap induksi kalus tanaman ciplukan (*Physalis angulata* L.) secara *in vitro*. Penelitian menggunakan Rancangan Acak Lengkap Faktorial (RALF) dua faktor, yaitu perlakuan 2,4-D (0, 1, 2, dan 4 mg/L) dan BAP (0, 0,5, 1, dan 2 mg/L) dengan tiga ulangan. Eksplan daun muda dikulturkan pada media MS dengan kombinasi ZPT sesuai perlakuan dan disubkultur selama 60 hari. Parameter yang diamati meliputi waktu munculnya kalus, persentase eksplan berkalus, berat kalus, diameter kalus, tekstur, dan warna kalus. Data dianalisis dengan uji ANOVA dua arah dan dilanjutkan dengan uji DMRT pada taraf 5% menggunakan apikasi SPSS 31. Hasil menunjukkan bahwa pemberian 2,4-D dan BAP, baik secara tunggal maupun kombinasi, berpengaruh signifikan terhadap seluruh parameter yang diukur. Kombinasi 1 mg/L 2,4-D + 2 mg/L BAP menghasilkan kalus paling cepat muncul, persentase eksplan berkalus tertinggi, serta berat dan diameter kalus terbesar. Kalus yang terbentuk bertekstur kompak dengan warna bervariasi dari hijau kekuningan hingga hijau kecoklatan.

Kata kunci: *Physalis angulata*, induksi kalus, Zat Pengatur Tumbuh , BAP, 2,4-D.

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ABSTRACT

Asri Sinurat, NIM 4213220003 (2025). The Effect of Applying ZPT 2,4-D (2,4-*Dichlorophenoxyacetic Acid*) and 6-*Benzyl Amino Purine* (BAP) on Ciplukan (*Physalis Angulata* L.) Callus Culture In Vitro.

This research aims to determine the effect of the growth regulators 2,4-*Dichlorophenoxyacetic Acid* (2,4-D) and 6-*Benzyl Amino Purine* (BAP) on the induction of callus in ciplukan plants (*Physalis angulata* L.) in vitro. The research used a Complete Randomized Factorial Design (CRFD) with two factors, namely the treatment of 2,4-D (0, 1, 2, and 4 mg/L) and BAP (0, 0.5, 1, and 2 mg/L) with three replications. The young explants were cultured on MS media with a combination of plant growth regulators according to the treatment and subcultured for 60 days. The parameters observed included the time of callus emergence, the percentage of explants forming callus, callus weight, callus diameter, texture, and color of the callus. Data were analyzed using a two-way ANOVA test followed by the DMRT test at the 5% level using SPSS 31 application. The results show that the application of 2,4-D and BAP, both individually and in combination, has a significant effect on all measured parameters. The combination of 1 mg/L 2,4-D + 2 mg/L BAP resulted in the fastest appearing callus, the highest percentage of explants forming callus, as well as the largest weight and diameter of the callus. The formed callus has a compact texture with colors varying from yellowish green to brownish green.

Keywords: *Physalis angulata*, callus induction, plant growth regulators, BAP, 2,4-D.

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