

## ABSTRAK

**Ajeng Maharani. 2016. Pengaruh Berbagai Teknik Sterilisasi dan Induksi Kalus dengan Pemberian 2,4-Dikloro Fenoksiasetat (2,4-D) Terhadap Pertumbuhan Eksplan Tanaman Jeruk Cikoneng (*Citrus Maxima* (Burm.) Merr. Kv. Cikoneng) Secara *In Vitro*. Di bawah bimbingan Liberty Chaidir dan Yati Setiati.**

Jeruk Cikoneng merupakan jeruk besar berasal dari Sumedang dan saat ini sedang mengalami kepunahan akibat terserangnya penyakit *Citrus Vein Phloem Degeneration* (CVPD). Upaya untuk meningkatkan kembali kelestarian Jeruk Cikoneng dilakukan dengan cara perbanyak secara kultur jaringan (*in vitro*). Tujuan dari penelitian ini adalah untuk mengetahui berbagai teknik sterilisasi dan pengaruh berbagai konsentrasi 2,4-D untuk mendapatkan hasil yang terbaik dari beberapa perlakuan. Penelitian dilaksanakan di Laboratorium Terpadu Universitas Islam Negeri Sunan Gunung Djati Bandung mulai April hingga September 2016. Eksplan menggunakan eksplan daun jeruk cikoneng. Penelitian ini dilakukan dengan menggunakan dua kali percobaan. Percobaan pertama sterilisasi eksplan dengan 3 perlakuan yaitu S1 = asam sitrat 0,75% selama 30' + surfaktan 1% selama 30' + alkohol 70% selama 5' + fungisida 2% selama 60' + fungisida 1% selama 30' + bakterisida 2% selama 60' + bakterisida 1% selama 30' + HgCl<sub>2</sub> 1% selama 7' + clorox 5% selama 3', S2 = alkohol 60% selama 0,5' + akuades selama 5' + clorox 30% selama 5' + akuades sebanyak 3 kali selama 5' dan S3 = asam sitrat 0,75% selama 30' + surfaktan 1% selama 30' + alkohol 70% selama 0,3' + fungisida 2% selama 30' + fungisida 1% selama 15' + bakterisida 2% selama 30' + bakterisida 1% selama 15' + HgCl<sub>2</sub> 1% selama 5' + clorox 10% selama 5' + akuades selama 5' yang masing-masing perlakuan diulang sebanyak 20 kali. Percobaan kedua penggunaan 2,4-D pada tahap induksi kalus dengan 2 perlakuan yaitu A1 = 2,4-D 1 mg L<sup>-1</sup> dan A2 = 2,4-D 2 mg L<sup>-1</sup> yang masing-masing diulang sebanyak 25 kali. Metode yang digunakan yaitu metode deskriptif. Hasil penelitian menunjukkan bahwa penggunaan teknik sterilisasi S3 menghasilkan 100% eksplan hidup tanpa kontaminasi cendawan maupun bakteri dan penggunaan konsentrasi 2,4-D 2 mg L<sup>-1</sup> yang diberikan untuk induksi kalus terhadap eksplan merupakan konsentrasi yang menghasilkan rata-rata muncul kalus tercepat.

Kata kunci : 2,4-D, *In Vitro*, Jeruk Cikoneng, Sterilisasi.

## ABSTRACT

**Ajeng Maharani. 2016. Effect of Sterilization Technique Various and Callus Induction with 2,4-Dikloro Fenoksiasetat (2,4-D) to Cikoneng Citrus Eksplan Growth (Citrus Maxima (Burm.) Merr. Kv. Cikoneng) In Vitro. Under the Guidance of Liberty Chaidir and Yati Setiati.**

Cikoneng citrus are big-sized ones originated from Sumedang that are in the verge of extinction caused by the Citrus Vein Phloem Degeneration (CVPD) disease. In order to preserve them, propagation of tissue culture (in vitro) was carried out. The purpose of this study was to determine the various sterilization techniques, the effects of various 2,4-D concentrations, and the best results of all treatments. The research was conducted at the Laboratory of Integrated State Islamic University Sunan Gunung Jati Bandung from April to September 2016. The explants used were Cikoneng citrus leaves. The treatments given on the sterilization consisted of 3 treatments: P1 = 0,75% citric acid for 30' + surfactant 1% for 30' + 70% alcohol for 5' + fungicide 2% for 60' + fungicide 1% for 30' + bactericidal 2% for 60' + 1% bactericidal for 30' + 1% HgCl<sub>2</sub> for 7' + 5% clorox for 3', P2 = 60% alcohol for 0.5' + distilled water for 5' + 30% clorox for 5' + distilled water 3 times for 5' and P3 = 0.75% citric acid for 30' + surfactant 1% for 30' + 70% alcohol for 0.3' + fungicide 2% for 30' + fungicide 1% for 15' + 2% bactericide for 30' + 1% bactericidal for 15' + 1% HgCl<sub>2</sub> for 5' + 10% clorox for 5' + distilled water for 5' in which each treatment was repeated 20 times. The treatments given callus induction stage consisted of two treatments: A1 = 2,4-D 1 mg L<sup>-1</sup> and A2 = 2,4-D 2 mg L<sup>-1</sup> were each repeated 25 times. The method used was descriptive method. The P3 sterilization technique (0.75% citric acid for 30' + surfactant 1% for 30' + 70% alcohol for 0.3' + fungicide 2% for 30' + fungicide 1% for 15' + 2% bactericidal for 30' + bactericide 1% for 15' + 1% HgCl<sub>2</sub> for 5' + 10% clorox for 5' + distilled water for 5') resulted 100% no fungus or bacteria contamination. Various 2,4-D concentrations were given to callus induction on big Cikoneng citrus leaf explants ST. 2,4-D 2 mg L<sup>-1</sup> concentration was the one producing the average when the fastest callus appeared.

**Keywords:** 2,4-D, In Vitro, Cikoneng Citrus, Sterilization.



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