RINGKASAN

Jeruk Keprok (*Citrus nobilis*) merupakan jeruk yang tergolong dalam lokal mandarin dan memiliki nilai ekonomi tinggi. Produksi jeruk keprok dalam lima tahun terakhir mengalami fluktuasi. Penurunan produksi jeruk di Indonesia disebabkan oleh menurunnya luasan lahan, anomali iklim, serangan penyakit, dan rendahnya penyediaan bibit. Salah satu upaya penyediaan bibit yang baik yaitu dengan kultur *in vitro*. Tujuan dari penelitian ini meliputi 1) mengetahui pengaruh konsentrasi BAP 1 mg/l dan 3 mg/l pada kultur *in vitro* ruas kotiledon jeruk keprok, 2) menentukan perlakuan terbaik yang menunjukan pengaruh pada kultur *in vitro* ruas kotiledon jeruk keprok, dan 3) mengetahui respon eksplan ruas kotiledon jeruk keprok yang ditanam secara *in vitro*.

Penelitian dilaksanakan di Laboratorium Pemuliaan Tanaman dan Bioteknologi Fakultas Pertanian Universitas Jenderal Soedirman Purwokerto mulai November 2016 sampai Maret 2017. Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan satu taraf dan diulang tiga kali sehingga menghasilkan sembilan unit. Setiap satu unit memiliki 10 sampel sehingga total sebanyak 90. Variabel pengamatan meliputi perubahan warna kalus, waktu muncul tunas pertama, waktu muncul kalus, jumlah tunas, tinggi tunas, dan jumlah daun.

Hasil penelitian menunjukan bahwa kultur *in vitro* dengan menggunakan ruas kotiledon pada konsentrasi BAP 1 mg/l dan 3 mg/l dapat meningkatkan jumlah tunas, jumlah daun, dan tinggi tunas. Perlakuan Konsentrasi 1 mg/l memberikan hasil terbaik dalam meningkatkan jumlah tunas sebanyak 2, 61 tunas, tinggi tunas sebesar 0,77 cm, dan jumlah daun sebanyak 6,42 helai. Penggunaan eksplan ruas kotiledon memberikan respon baik dalam menginduksi tunas. Hal ini ditandai dengan munculnya 42 tunas adventif dan 28 tunas aksilar.

Kata Kunci : mandarin, BAP, dan ruas kotiledon.

SUMMARY

Jeruk Keprok (Citrus nobilis) is considered as a local mandarin and a horticultural commodity with high economic value. Production of keprok has been fluctuating in the last five years. Land decrement, climatic anomalies, diseases infection, and low seed supply can decrease the production of citrus. In vitro culture is one of the ways to keep the seed supplies. The aim of the research were to 1) study the effect of different BAP with concentration1 mg / l and 3 mg / l on in vitro cotyledon segments culture in keprok orange, 2) to determine which treatment that has the best effect on in vitro cotyledon segments culture in keprok oranges, 3) to study explants response of cotyledon segment keprok oranges are planted in vitro culture.

The research was conducted from November 2016 to March 2017 at Plant Breeding and Biotechnology Laboratory of Agriculture Faculty of Jenderal Soedirman University .The experimental design used in this research was Complete Randomized Block Design (CRBD) with three replications to produce nine units. Each unit has 10 samples so that the total sample was 90. Observed variables were discoloration of callus, time of first emerging buds, time of the first emerging callus, the number of buds, the length of buds, and the number of leaves.

The results of this study showed that the in vitro culture using cotyledon segments on BAP concentration of 0 mg / l, 1 mg / l and 3 mg / l could induce buds number, leaves number, and buds height. The results of this study showed that the in vitro culture using cotyledon segments on BAP concentration of 0 mg / l, 1 mg / l and 3 mg / l could induce buds number, leaves number, and buds height. Concentration 1 mg/l showed the best result in improving the number of buds as 2,63 buds, the length of bud as 0,77 cm, and the number of leaves as 6,42 leaves. The use of cotyledon segment explant showed good response for induction of new shoots. This can be shown by the emerging of 42 adventitious buds and 28 axillary buds.

Keywords: mandarin, BAP, and cotyledon segment.