

PENGARUH JENIS STEK, JUMLAH DAUN TIAP STEK, DAN PEMBERIAN AUKSIN TERHADAP PERTUMBUHAN DAN KOMPOSISI MINYAK ESENSIAL TANAMAN POKO (*Mentha arvensis* L. var. *javanica* (Bl.) Hook.f.)

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ABSTRAK

Mentha arvensis merupakan salah satu tanaman penghasil minyak esensial. Indonesia masih mengimpor minyak esensial dan nilai impor terus meningkat sejalan dengan pertambahan jumlah industri. Berdasarkan hal tersebut, *M. arvensis* berpeluang dikembangkan di Indonesia. Penelitian ini bertujuan mempelajari pengaruh jenis stek, jumlah daun tiap stek, dan pemberian auksin terhadap pertumbuhan dan komposisi minyak esensial *M. arvensis*. Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan tiga faktor yaitu jenis stek (pucuk, batang, atau stolon), jumlah daun tiap stek (tanpa daun, dua daun, empat daun, atau enam daun), dan konsentrasi IAA (0 ppm, 7,5 ppm, atau 15 ppm). Masing-masing kombinasi perlakuan dilakukan dengan 6 ulangan. Parameter yang diamati adalah pertumbuhan (jumlah tunas cabang, jumlah daun baru, jumlah akar, panjang akar, berat segar akar, berat kering akar, berat segar pucuk, berat kering pucuk) dan komposisi minyak esensial. Data dianalisis menggunakan Analisis Varian (Anava) dilanjutkan dengan *Duncan Multiple Range Test* (DMRT) pada taraf kepercayaan 95%.

Hasil penelitian menunjukkan bahwa perlakuan jenis stek, jumlah daun tiap stek, dan pemberian auksin berpengaruh terhadap pertumbuhan dan komposisi minyak esensial *M. arvensis*. Stek pucuk menghasilkan jumlah daun baru, berat segar pucuk, dan berat kering pucuk lebih besar daripada stek batang dan stek stolon, sedangkan stek batang menghasilkan jumlah tunas cabang, jumlah akar, panjang akar, berat segar akar, dan berat kering akar lebih besar daripada stek pucuk dan stek stolon. Stek batang menghasilkan golongan senyawa dalam minyak esensial lebih banyak daripada stek pucuk dan stek stolon. Perlakuan jumlah daun tiap stek meningkatkan pertumbuhan pada semua parameter. Pemberian auksin meningkatkan jumlah tunas cabang, jumlah daun baru, jumlah akar, panjang akar, berat segar akar, dan berat kering akar serta menurunkan berat segar pucuk dan berat kering pucuk. Kombinasi perlakuan jumlah daun tiap stek dan pemberian auksin pada berbagai jenis stek meningkatkan pertumbuhan pada semua parameter kecuali jumlah tunas cabang, berat segar pucuk, dan berat kering pucuk. Kombinasi perlakuan 6 daun dan IAA 15 ppm pada stek pucuk merupakan kombinasi perlakuan terbaik dalam meningkatkan jumlah daun baru, jumlah akar, panjang akar, berat segar akar, dan berat kering akar.

Kata kunci: *Mentha arvensis*, stek, IAA, minyak esensial

THE EFFECTS OF CUTTING TYPES, NUMBER OF LEAVES PER CUTTING, AND AUXIN APPLICATION ON THE GROWTH AND ESSENTIAL OILS COMPOSITION OF CORNMINT (*Mentha arvensis* L. var. *javanica* (Bl.) Hook.f.)

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ABSTRACT

Mentha arvensis is one of the essential oils crop. Indonesia still imports essential oils and the value of imports continued to increase concurrent with an increasing number of industries. Under these conditions, *M. arvensis* has prospect to be developed in Indonesia. This study was aimed to analyze the effects of cutting types, number of leaves per cutting, and auxin application on the growth and essential oils composition of *M. arvensis*. Randomized Completely Block Design (RCBD) was used in this study with three factors, namely cutting types (shoot, stem, or stolon), number of leaves per cutting (no leaf, two leaves, four leaves, or six leaves), and IAA concentrations applied (0 ppm, 7,5 ppm, or 15 ppm). For each combination treatment was made six replicates. The parameters observed were plant growth (number of shoot branches, number of new leaves, number of roots, root length, root fresh weight, root dry weight, shoot fresh weight, shoot dry weight) and essential oils composition. Collected data were analyzed using Analysis of Variance (Anova) followed by Duncan Multiple Range Test (DMRT) at 95% confidence level.

The results showed that cutting types, number of leaves per cutting, and auxin application determine the growth and essential oils composition of *M. arvensis*. Shoot cutting produced higher number of new leaves, shoot fresh weight, and shoot dry weight than stem and stolon cutting, while stem cutting produced higher number of shoot branches, number of roots, root length, root fresh weight, and root dry weight than shoot and stolon cutting. Stem cutting produced more class of compounds in essential oils than shoot and stolon cutting. Number of leaves per cutting treatment increased growth in all parameters. Auxin application increased number of shoot branches, number of new leaves, number of roots, root length, root fresh weight, and root dry weight and also decreased shoot fresh weight and shoot dry weight. Combination treatment of number of leaves per cutting and auxin application on different cutting types increased growth in all parameters except number of shoot branches, shoot fresh weight, and shoot dry weight. Combination treatment of 6 leaves and IAA 15 ppm in shoot cutting was the best combination to increase number of new leaves, number of roots, root length, root fresh weight, and root dry weight.

Keywords: *Mentha arvensis*, cutting, IAA, essential oil