

Kultur in vitro daun melastoma malabathricum l. pada medium murashige & skoog (1962) (MS) modifikasi dengan penambahan thidiazuron (TDZ) dan asam 2,4-diklorofenoksiasetat (2,4-D) = In vitro culture from leaves of melastoma malabathricum l. on murashige & skoog (1962) (MS) medium with thidiazuron (TDZ) and 2,4-dichlorophenoxyacetic acid (2,4-D)

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Abstrak

ABSTRAK

Melastoma malabathricum L. merupakan anggota suku Melastomataceae yang berpotensi dikembangkan sebagai tanaman obat dan fitoremediator, sehingga perlu dikembangkan, salah satunya melalui kultur in vitro. Penelitian kultur in vitro daun M. malabathricum dilakukan untuk mengetahui respons eksplan terhadap penambahan zat pengatur tumbuh TDZ 0, 1, 2, dan 3 mg/l dan 2,4-D 0; 0,1; 0,2 mg/l secara tunggal maupun kombinasi. Kalus yang terbentuk pada seluruh perlakuan memiliki warna dan tekstur yang beragam. Pada perlakuan TDZ tunggal, 2,4-D tunggal, dan kombinasi keduanya, dihasilkan kisaran 75-95, 95-100, dan 45-90 eksplan yang membentuk kalus. Akar adventif terbentuk pada perlakuan 0,1 mg/l TDZ 70 dan 0,2 mg/l 2,4-D 60. Lebih lanjut, tunas adventif terbentuk pada perlakuan 1 mg/l TDZ 15, 2 mg/l TDZ 5 dan 3 mg/l TDZ 5. Persentase kuantifikasi kalus pada perlakuan 0,1 mg/l 2,4-D 63; 0,2 mg/l 2,4-D 50; 2 mg/l TDZ 42 dan 3 mg/l TDZ 50 cenderung lebih tinggi dibandingkan perlakuan lain, yaitu dengan skor 3 kategori jumlah kalus 'sedang'. Dengan demikian, eksplan daun dapat merespons medium dengan membentuk kalus pada seluruh medium perlakuan, merespons akar adventif hanya pada medium 2,4-D tunggal, dan merespons tunas adventif hanya pada medium TDZ tunggal.

ABSTRACT

Melastoma malabathricum is a member of the Melastomataceae that is potential to be developed as a medicinal purpose and phytoremediation plant. Therefore, cultivation such as by in vitro culture, should be useful. The aim of this research was to know effect of thidiazuron TDZ and 2,4 dichlorophenoxyacetic acid toward growth and development of the leaves culture of Melastoma malabathricum. Explant were cultured in solid MS containing single or combination TDZ 0, 1, 2, 3 mg/l and 2,4 D 0 0,1 0,2 mg/l. Various color and texture of callus was induced in all treatments. In the presence of single TDZ, single 2,4 D, and both TDZ 2,4 D, about 75-95, 95-100, and 45-90 explants produced callus, respectively. Root adventitious was produced in 0,1 mg/l TDZ 70 and 0,2 mg/l 2,4 D 60. Furthermore, shoot adventitious was initiated in 1 mg/l TDZ 15, 2 mg/l TDZ 5 and 3 mg/l TDZ 5. Percentage of callus quantification in treatment 0,1 mg/l 2,4 D 63 0,2 mg/l 2,4 D 50 2 mg/l TDZ 42 and 3 mg/l TDZ 50 were higher than other treatments. Research about in vitro culture from leaves of M. malabathricum on MS media containing single or combination TDZ 0 0,1 0,2 mg/l and 2,4 D 0, 1, 2, 3 mg/l has been conducted. Callus were induced on 12 different media, adventitious root were induced only on single 2,4 D media, and adventitious shoot were induced only on single TDZ media. Keywords thidiazuron 2,4 dichlorophenoxyacetic acid Melastoma malabathricum callus.