

Kultur in vitro Daun *Melastoma malabathricum* (L.) pada Medium Murashige & Skoog (1962) (MS) Modifikasin dengan penambahan Thidiazuron (TDZ) dan Asam 2,4- Diklorofenoksiasetat (2,4-D)= In Vitro Culture from Leaves of *Melastoma malabathricu* L. on Murashige & Skoog (1962) (MS) Medium with Thidiazuron (TDZ) and 2,4-Dichlorophenoxyacetic Acid (2,4-D)

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Abstrak

*Melastoma malabathricum* merupakan anggota suku Melastomataceae yang berpotensi dikembangkan sebagai tanaman obat dan fitoremediator. Oleh karena itu, kultur in vitro dapat dilakukan untuk perbanyakan dan penelitian lanjutan. 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 (70 %) dan 0,2 mg/l 2,4-D (60 %). Lebih lanjut, tunas adventif terbentuk pada perlakuan 1 mg/l (15 %), 2 mg/l (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

*Melastoma malabathricum* is a member of the Melastomataceae family 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 2,4-dichlorophenoxyacetic acid and thidiazuron (TDZ) 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 (70 %) and 0,2 mg/l 2,4-D (60 %). Furthermore, shoot adventitious was initiated in 1 mg/l (15 %), 2 mg/l (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<sup>-1</sup> TDZ (42%) and 3 mg<sup>-1</sup> 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<sup>-1</sup>) and 2,4-D (0, 1, 2, 3 mg<sup>-1</sup>) 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