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)

Filzah Putri, author

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 mgl-1) dan 2,4-D (0; 0,1; 0,2 mgl-1) 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 mgl-1 (70 %) dan 0,2 mgl-1 2,4-D (60 %). Lebih lanjut, tunas adventif terbentuk pada perlakuan 1 mgl-1 (15 %), 2 mgl-1 (5 %) dan 3 mgl-1 TDZ (5 %). Persentase kuantifikasi kalus pada perlakuan 0,1 mgl-1 2,4-D (63 %); 0,2 mgl-1 2,4-D (50 %); 2 mgl-1 TDZ (42 %) dan 3 mgl-1 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 mgl-1) and 2,4-D (0; 0,1; 0,2 mgl-1). 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 mgl-1 (70 %) and 0,2 mgl-1 2,4-D (60 %). Furthermore, shoot adventitious was initiated in 1 mgl-1 (15 %), 2 mgl-1 (5 %) and 3 mgl-1 TDZ (5 %). Percentage of callus quantification in treatment 0,1 mgl-1 2,4-D (63%); 0.2 mgl-1 2,4-D (50%); 2

mgl-1 TDZ (42%) and 3 mgl-1 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 mgl-1) and 2,4-D (0, 1, 2, 3 mgl-1) 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