

Effects of Culture Media on Catechins and Caffeine Production in Adventitious Roots of Tea Tree (*Camellia sinensis* L.)

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ABSTRACT

The influence of the culture media on the growth and catechins and caffeine production was investigated in adventitious root cultures of tea tree. The growth rate of adventitious roots was higher than that of solid medium. Growth rate of adventitious roots was noted to be optimal in N6 liquid medium. Yields of (-)-epicatechin gallate (ECG) and caffeine were the highest when adventitious root cultures were maintained in Nitsch and B5 liquid medium, respectively. The production of (-)-epicatechin (EC) and (-)-epigallocatechin gallate (EGCG) from adventitious roots was maximal when cultured in 1/2MS liquid medium. The adventitious root extracts of tea tree produced on catechins as EC (20.77 mg/g) and EGCG (1.84 mg/g) in 1/2MS medium; EGC (24.39 mg/g) and caffeine (12.97 mg/g) in B5 medium and (-)-epigallocatechin (ECG) (2.16 mg/g) in Nitsch liquid medium.

Key words - *Camellia sinensis* L., Caffeine, Catechins, Adventitious root culture

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