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Study on callogenesis and growth kinetics of F. deltoidea var. trengganuensis cell suspension culture (Article)

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Abstract

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Active compounds such as secondary metabolite from plants can be produced via its regeneration of organ or callus or from cell suspension culture. Thus, the aim of this study is to establish the protocol for callus regeneration and cell suspension culture of Ficusdeltoidea var. trengganuensis. Callus regeneration study was conducted on solid media consisted of 9 treatments with combination of picloram and 2,4-D ranging from 1.5 ppm to 4.5 ppm. After 4 weeks, the callus were weight under sterilize condition. Treatment consisted of MS + 3 ppm picloram + 3 ppm 2,4-D was found to form the highest weight of callus formation (68.8 ± 21.25 mg). Cell suspension was then established where 4 weeks old of soft and friable callus of F. deltoidea were used as an inoculum at 2% (w/v) in a 100mL of media. Aboutlml media was collected at 5 days interval to determine its dry cell weight. The cell suspension culture established in this study showed an increase in its dry cell weight (mg/mL) until day 15 th where the density of the biomass were observed to decrease at day 20th. The highest specific growth rate (5.49 × 10^{-3} h^{-1}) was observed at day 5 to day 10.

Author keywords

Callus | Cell suspension | Dry cell weight (DCW) | Inoculum density | Picloram

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