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Enhancement of Growth Regulators to Callus Formation and Silymarin Content from Different Explants of Silybum marianum Seedling

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Abstract : Silymarin is one active component extracted from milk thistle Silybum marianum; it is flavonoid recognized for its ability to benefit people with liver disorders and as a protective compound against liver damaging agents. For this reason, this research aims to study the effect of growth regulators (BA+NAA) and explant type (cotyledon, hypocotyl, and root) to increase the growth and active ingredients (silymarin) in callus of S. mariaum plant. The results showed that cotyledon explant which have been cultured in MS medium supplemented with BA 0.4 mg/l. +NAA 0.25 mg/l. Led to obtain the best results in callus fresh weight (1.847a) and callus dry weight (0.155a). On the other hand, the same explant (cotyledon) cultured in MS medium supplemented with BA 1.6 mg/l. + NAA 0.5 mg/l. The suitable condition to silymarin content (0.132 mg/100 mg dry weight). And also, it turned out, lack of importance of the use of hypocotyl and root in the production of callus and silymarin compared to cotyledon.

Keywords : silybum, callus, tissue culture, cotyledon
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