

Investigating effects of concentration microelements, macroelements and sucrose on the branching and initiation of adventitious roots derived from single - node potato (*solanum tuberosum* L. var. *marfona*) cultured in vitro.

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Potato is one of the strategic plants in IRAN and some countries in the world. Because of tremendous increases in human population and consumption of this crop in the world, It has found the fourth position amongst of the strategic plants

Potato production could be active throught in vitro culture. Better growth of microtubers could be achived by changing nutrional conditions resulting in stronger branches. Explants were cultured on the medium culture with 0.4 mg/L GA3, 0.1 mg/L NAA and different of concentrations 0, 1/2 MS 3/2 MS, 2 MS the concentrations of microelements and sucrose in MS medium. Results showed that MS medium and MS-Modified were desirable for growth solonum tuberosum var. marfona. Branches and adventitious roots showed better KNO3 with concentration equal to 1/2 MS. Growth of branches and development of blade were better in KH2 PO4 with concentration equal to 2MS. Growth of roots was desirable on the same medium. Average number of roots desirable on the same medium. Average number of adveritious roots decreased highest level of growth of adventitious roots was found on the medium containing FeSo4. 7H2O with concentration of equal to 2MS.

Number of adventitious roots increased on MS medium supplemented with 30 g/L sucrose.

Growth of aerial and underground ogans was inhibited in the medium in the