

TRIGONELLA FOENUM-GRAECUM L.

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87 ., 32 ., 2 ., 113
TRIGONELLA FOENUM-GRAECUM,

Ovari 4.

vitro,

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ABSTRACT

Diploma work 87 p., 32 fig., 2 tables, 113 sources

TRIGONELLA FOENUM-GRAECUM, SUSPENSION CULTURES, GROWTH CURVE, VITALITY, IMMOBILIZATION, PHENOLIC COMPOUNDS, PHENOLIC ACIDS, ANTIOXIDANT ACTIVITY, ANTIRADICAL ACTIVITY.

Object of research: The object of study: suspension culture is initiated from the callus culture leaf origin of fenugreek (*Trigonella foenum-graecum* L.) spring varieties Ovari 4.

Aim of work: study morphophysiological and biochemical characteristics of the suspension culture fenugreek during the growth curve.

Research methods: culturing the plant cells and tissue in vitro, immobilization suspension culture in a calcium alginate gel, spectrophotometric determination total content phenolic compounds by Folin-Ciocalteu, antiradical activity by DPPH, total antioxidant activity phosphomolybdic method.

As a result of this work, was found that the curve of fenugreek suspension culture growing is S-shaped. The optimal growing period of cultivation was from 21 to 24 days. The suspension of cells is dominated by the single cells and small aggregates essentially differing sizes and shapes. Suspension culture of fenugreek is characterized by high vitality. The maximum level of phenolic accumulation in suspension culture and have the initial stationary phase of growing, and accumulation of data exceeds the metabolites of immobilized cells. The main part of the phenolic compounds are phenolic acids. The total antioxidant activity of fenugreek cell suspension depends on the content of phenolic compounds and antiradical properties of culture is largely dependent on the phenolic acids. When immobilization growth rate has slowed down, and the immobilization does not increase the accumulation phenolics in cells, but increases the excretion into the culture medium of-phenolic nature metabolites compared with the free cells. Antioxidant potential the immobilized cells of suspension culture is lower than in the free cells, but antioxidant potential the incubation medium is characterized by more expressed regenerative and proton donor feature.