



ISOLATION OF ENDOPHYTIC BACTERIA FROM THE AERIAL PART OF POLYGONUM AVICULARE

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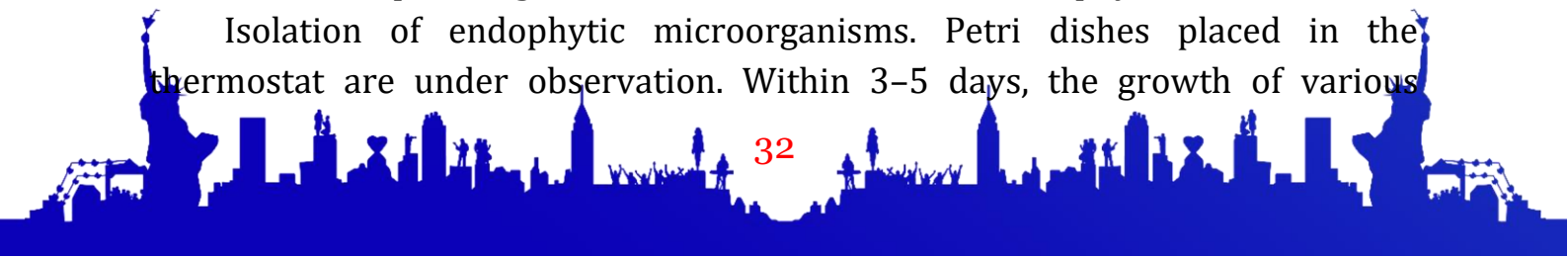
Endophytic microorganisms affect plant growth, development and productivity due to the synthesis of various phytohormones, and also contribute to the conversion of insoluble mineral salts into a form accessible to plants. Endophytic bacteria are microorganisms that colonize the internal tissues of plants without causing diseases in them. They inhabit the intercellular spaces and inside the cells, promoting plant growth, increasing their resistance to stresses (drought, salinity) and protecting them from pathogens. To isolate strains of endophytic bacteria, root samples were thoroughly washed with distilled water in order to remove surface contamination. After washing, the samples were immersed for 5 minutes in a 70% ethanol solution and for 1 minute in a 0.1% solution of mercuric chloride (HgCl_2), and then washed with sterilized water to remove sterilizing agents. To prepare the initial homogenate solution, 5 g of root sample tissue were homogenized in 50 ml of distilled water. The obtained homogenate solution was inoculated by the method of sequential serial dilutions into Petri dishes with nutrient agar. To control the quality of surface sterilization of the sample, 100 μl of the liquid from the last washing was inoculated into a dish with nutrient agar.

Experimental and control cultures were incubated in a thermostat at 30°C for 48 hours. If not a single colony appeared in the control dishes, it was considered that endophytic bacteria were present in the experimental dishes. Pure colonies were isolated from the experimental dishes during the streaking process.

Keywords: (Bacteria, Polygonum aviculare, medium, microorganism, incubation).

Microorganisms present in the intercellular spaces of any plant tissues without visible pathological manifestations are called endophytic.

Isolation of endophytic microorganisms. Petri dishes placed in the thermostat are under observation. Within 3–5 days, the growth of various





endophytic bacteria can be observed in them, and within a week germinating fungal hyphae can also be seen. After 1 week, the microorganisms in the Petri dishes removed from the thermostat are examined, purified and transferred to a new nutrient medium, after which the dishes are placed back into the thermostat for 3 days. After 3 days, the Petri dishes are again removed from the thermostat, the microorganisms are purified from pathogens, transferred to a new nutrient medium and placed in the thermostat at a temperature of 26–28 degrees for another 4 days. After 4 days, the Petri dishes with grown pure microorganisms are removed from the thermostat and examined in the MALDI apparatus to determine their species affiliation.

Conclusions: In conclusion, it should be emphasized that endophytic microorganisms belonging to the species **Enterobacter cloacae** were found in the stem and leaves of the plant *Polygonum aviculare*, *Bacillus subtilis* in the root part, and *Cronobacter* sp and *Pseudomonas flavescens* only in the leaves.

List of used literature:

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