DOMINANT MICROORGANISMS IN CICHORIUM INTYBUS

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ABSTRACT

(Cichorium intybus L) is a plant belonging to the genus Cichorium intybus L of the eukaryotic domain, plant kingdom, type of flowering plants, class of dicotyledons, family of complex flowers (Asteraceae). Common chicory (Cichorium intybus L) is a perennial concrete herb belonging to the complex flower family. In particular, the analysis of the microbiome contained in Cichorium intybus has attracted the attention of scientists. Because the endophytic composition of this plant has its valuable biotechnological potential.

Keywords *Asteraceae, Enterococcus faecalis, A. Pseerococcus, baumannii, Staphylococcus aureus, Acinetobacter baumannii, Klebsiella pneumoniaeuiae Bacillus subtilis.*

Introduction Endophytes do not cause any serious morphological changes and are considered safe microorganisms. They live in plant tissues and secrete phytohormones necessary for the plant. These phytohormones have a positive effect on plant growth and development. These endophytes absorb free nitrogen from the air, dissolve phosphate salts and produce phytohormones, and reduce the amount of ethylene, a stress factor in plants [11]. For this reason, the composition of endophytic microorganisms in Cichorium intybus is being studied and it has been shown that there

are different genera of microorganisms in different countries around the world. Among them, it was found that microorganisms such as Staphylococcus aureus, Enterococcus faecalis, A. Pseerococcus, baumannii were isolated from Cichorium intybus growing in Iran [5] There are many assumptions that these endophytes determine the medicinal properties of medicinal plants, and their The fact that the metabolites in the plant are similar to the metabolites in the plant is a proof of this [4]. For this reason, it is important to study the medicinal properties of the mushroom plant and study the composition of endophytes in order to conveniently use this medicinal property on an industrial scale. Based on this, Pelargonium hortorum and Portulaca oleracea were isolated from mushrooms growing in Iran and their antagonistic relations against Staphylococcus aureus and Acinetobacter baumannii were studied [6]. A total of seven groups of endophytes were found to be dominant in Cichorium intybus, and they were located in different organs throughout the plant. In particular, six of them were found in the leaves of the plant and one in the branches of the plant.

Literature analysis and methodology on the topic

A total of seven endophyte communities were found to be dominant in Cichorium intybus and they were located in different organs throughout the plant. In particular, six of them were found in the leaves of the plant and one in the branches of the plant. They can be characterized on the basis of micromorphological, gram staining and enzyme tests. In this, the composition of endophytes of the above-ground part of the shoot was checked. In addition, scientists have shown that it is possible to guess about the types of endophytic microorganisms in its composition based on the study of the antagonistic properties of the mushroom plant. In particular, as a result of research conducted to determine the antimicrobial properties of Cichorium intubus, its effect on six bacteria, namely Pseudomonas aeruginosa, Escherichia coli, Staphylococcus epidermis, methicillin-resistant Staphylococcus aureus, Klebsiella pneumoniaeuiae Bacillus subtilis was studied. These studies have shown that the mushroom has good antibacterial properties. The analysis of endophytes of the world's shoots shows that

there are differences between the dominant endophytes of Cichorium untybus growing in different climates and it affects their characteristics. Streptomyces sp. was obtained from endophytic microorganisms growing in Australia and its properties were studied. It was found that they have bioactivity against gram-positive bacteria and activity against malaria parasites. Endophytic fungi Xylaria sp. from Cichorium intybus L. growing in East China. YX-2 is insulated. A biologically active compound identified as 7-amino-4-methylcoumarin was isolated from this endophyte and it showed significant antimicrobial activity against several food and food spoilage microorganisms. S. aureus, E. coli, S. typhia, S. typhimurium. , S. enteritidis, A hydrophila, Yersinia sp., V. anguillarum, Shigella sp., V. parahaemolyticus, C. albicans, P. expansum, A. hydrophila and A. niger and it is suggested that this combination can be used.

Result and discussion When studying the composition of common fungal endophytes growing in South Africa, it was found that most of them are a group of microorganisms belonging to the genus Bacillus. A total of five endophytes were determined, endophytic microorganisms were morphologically characterized, and various studies were conducted to find out their species sequence. To do this, it was determined that endophytes obtained by 16S RNA gene sequencing belong to the genus Bacillus, two of which are Bacillus thuringiensis strain PWI-44, Bacillus pumilus strain 2XWM-ARB08, Bacillus cereus strain TR11, Bacillus cereus strain BC2. In this case, the antimicrobial properties of the mushroom were shown by cultures prepared from its leaves against Bacillus cereus, Staphylococcus aureus, and Staphylococcus. Root extracts showed significant activity against Bacillus cereus and minimal activity against Staphylococcus epidermidis. Moreover, this plant has been found to have various phytochemical compounds that confirm its antimicrobial activity and use as a medicinal plant.

1-table

No	The composition of endophytes of C.intybus (by country)	A community of microorganisms	A community of microorganisms
1	Avstraliya	*Streptomyce*	*Streptomyces sp*
2	Eron	*Staphylococcus Enterococcus*	*Staphylococcus aureus, Enterococcus faecalis, A. Pseerococcus, baumannii, Pseudomonas aeruginosa, Escherichia coli, Staphylococcus epidermis, metitsillinga chidamli Staphylococcus aureu, Klebsiella pneumoniaeuiae Bacillus subtilis*
3	South Africa	*Bacillus*	*Bacillus thuringiensis strain PWI-44, Bacillus pumilus strain 2XWM-ARB08, Bacillus cereus strain TR11, Bacillus cereus strain BC2*
4	Eastren China	*Xylaria sp. YX-2 Enterococcus*	*S. aureus, E. coli, S. typhia, S. typhimurium. , S. enteritidis, A hydrophila, Yersinia sp., V. anguillarum, Shigella sp., V. parahaemolyticus, C. albicans, P. expansum, A. hydrophila va A. niger*

Conclusion

In recent years, in connection with the depletion of existing resources, there has been a need to search for alternative methods of production of various modern drugs and new drugs. In addition, endophytes are known to produce bioactive secondary metabolites structurally belonging to the following groups: alkaloids, phenolic acids, flavonoids, terpenoids, steroids, etc. Secondary metabolites of endophytes in sachratki have valuable pharmaceutical value and have been used as a source for drug discovery, such as taxol, an anticancer drug derived from an endophytic fungus called Taxomyces andreanae. Antibiotics have also been produced from endophytic fungi.

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