miniTn5xylE insertion in the response to specific environmental stimuli including the influence of the host plant.

For these purposes several experimental pathways were used: 1) the incubation of mutant bacteria on the potato leafs surface; 2) realization of the contact between bacteria and potato stem slices; 3) growing bacteria on the media with the potato stem sap. The best resultes were obtained using the third pathway which was also used in the following experiments.

It was prescribed that the mutants Eca X787, X1707, ZR116 have the enchanced level of gene xylE expression on the medium with the substances from the host plant tissues, but the mutants Eca ZR119, ZR111, ZRn12 decreased the catechol-2,3-dioxygenase activity in the response to such a contact. It allowes us to assume that changed genes play an essential role in the regulation of the interactions between plant and pathogenic organism.

At present we are carrying out a further research of the obtained mutant bacteria with the aim of the identification of the mutant genes functions and their localization in the chromosome of Eca.

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CONSTRUCTION OF ERWINIA STRAIN FOR THE FUSION WITH β-6ALACTOSIDASE GENE IN VIVO

Chemical compounds used in a struggle against pest often of the ecological situation. Therefore we of the new methods for the selective cause the worssing need in developing pathogen depress. It is expected that the study of the genetic organization of pathogen and molecular communications between host and parasite will lead to originating this one.

Erwinia carotovora subsp. atroseptica (Eca) causes the potato blackleg. Its pathogenic factors such as exoenzymes that can degrade a plant cell wall (pectinases, cellulases, proteases) had been studied. The genetic determination of the host-pathogen interaction, host recognition, resistance overcoming are less known.

We constructed Erwinia strain for the fusion with E.coli suitable for the indicator β-galactosidase gene, wich can be research of bacterial genes activity.

The wild type strains of Eca are able to utilize lactose. After NG-mutagenesis we selected Eca with the 2% of l-galactosidase activity in comparison with the same activity of the wild type strain. Complementation (restoration of the Lac+ phenotype)has been shown after transposition of miniTn51acZl,harboring the E.coli βgalactosidase

promotorless gene.But the bacteria of this strain had decreased level of the pectate lyases. and cellulases secretion.

As a result of the transposition of miniTn5xylE into the chromosome and introduction of the plasmid R471a::miniTn5xylE into these cell the donor strain was construeted. The lacZ mutation was transferred to the polyauxotrofic recipient and then auxotrophye mutations were substituted by mating. The prototroph strain has normal level of the expression of pathogenic factors. It was detected that the result of the transposition of miniTn51acZl was 40% Lac+ transposants and 0,8% auxotrophs therefore we concluded suitability of our strain for the study of bacteria-plant interactions.

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STUDY OF AQUATIC HYPHOMYCETES - INDICATORS OF ECOLOGICAL CONDITIONS OF WATERCOURSES.

Masses of allochtonous organic matter serving a substrata for saprotrophic fungi enter in freshwater lotic habitats. Aquatic hyphomycetes are main destructors of this rests. Their role in the trophic chains of lotic coenoses consists in transformation of deciduous leaves and other substrata into food for invertebrates. In addition, aquatic hyphomycetes are promising indicators of pollution with sewage. They also can be used for biological cleaning of water. Results of investigation fungal community structure of various types of watercourses is presented. Eighteen watercourses differed by hydrological conditions were observed.

The obtained data (table 1) demonstrate that: 1) species composition is richest in clean, fast watercourses with high aeration (forest river N 1 and forest stream N 2); 2) tendency of elimination of typical aquatic species with tetraradiate conidia take place in polluted watercourses (especially in small ones) in Minsk city (river Svisloch N 3, stream N 4 ("thermal pollution"), watercourses N 5,6 (slow flowings); in addition, increasing in percentage of scolecosporous species (Anguillospora longissima), semiaquatic, "water-borne" species (Vargamyces aquaticus, unident. sp. N 1 (possibly, belonging to Volucrispora - Tricellula complex or to genus Lambdasporium)) was noted.

The increase of p-art of aquatic comycetes and geofungi (Fusarium, Macrosporium and etc.) in polluted water was observed. Probably, the unfaverable for aquatic hyphomycetes conditions due to decrease of oxygen concentration in polluted water cause these changes. It is thought that the structure of fungal complexes and its changes can be cosidered as indicators of ecological conditions in watercoutses and their pollution with sewage.