

Preparation of a mixture of bacteriophages for prevention and fight against bacterial diseases of rice

Description:

Prevention and fight against bacterial diseases of agricultural plants are carried out using a mixture of bacteriophages specific to strains of the bacteria. Bacteria of the genus *Xanthomonas* are plant pathogens that infect many economically significant crops. Rice is affected by *X. oryzae* leading to extremely large yield losses. For example 20% of rice is infected in Karakalpakia region (Kazakhstan). Bacteriophages are used to treat the following objects: infected seeds, infected plants or plant materials, soil, etc. where the infected plants are growing, irrigating water, soil in other sites, soil supplements.

The **goal** of the invention is to prevent and treat bacterial diseases of rice. The **objectives** of the invention are to create bactericidal preparations against plant bacterial pathogens, causing rice scorch. The treating preparation is a sterile filtrate of *Xanthomonas* phago-lysate. The composite can be sprayed on vegetating plants or put on affected plants with a swab. The bacteriophages' composite can also be introduced directly to soil or irrigating water. A polyvalent concentrate of bacteriophage reduces infection of plants with bacterial diseases by 50-90% contributing to increasing the yield.

Innovative aspect and main advantages:

The innovation aspect of this invention is to treat bacterial diseases by the mean which is an alternative to chemical bactericidal preparations contaminating environment.

Phage preparations are highly specific for their host bacteria and the process of bacteriophage infection will continue exponentially until all sensitive bacteria are destroyed.

It is safe for the plant and environment.

The preparation is used for treatment bacterial diseases of rice caused by *Xanthomonas campestris* pv *oryzae*

Areas of Application:

The invention is related to agriculture and is possible effective mean for protection of plants from bacterial diseases

Stage of Development:

Field (nature) experiment were made, the technique was tested and is ready for demonstration.

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