Anti-Fire-Blight Effect of Bacteriophage phiEa2809

Krauchanka, Ulyana
Vlasavets, Nastassia

Fire blight, caused by the pathogenic bacterium Erwinia amylovora, is one of the most destructive and thus very significant from the economic point of view, disease of apples, pears and many other Rosaceae plants. This disease is usually controlled by application of antibacterial chemicals or microbial antagonists which is not eco-friendly. Erwinia amylovora specific bacteriophages may play an important role in epidemiology of fire blight and have a great potential for disease control. In this study, we investigated the effectiveness of bacteriophage phiEa2809 application as a fire blight biological control agent. Bacteriophage phiEa2809 (1.00E+6 PFU) has managed to effectively control Erwinia amylovora populations by reducing optical density of liquid cultures. But the application of this phage did not result in a complete inhibition of fire blight symptoms in experiments on immature pear fruits and now we have to do some new experiments to find reason. Frequency of spontaneous phage-resistant mutants development was mostly very low (<1,00E-6).

Awards Won: