

Healthy Grapevines without Heavy Metals

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In this project we come with an innovative method of combating fungal diseases of grapevines, which nowadays are treated with chemicals based on copper that is a heavy metal and can cause serious damages to the environment. The initial idea was to find alternative ways of processing grapevines to against fungal diseases. The purpose of our project: To study the possibility of using fungi of genus *Trichoderma* for biological protection of grapevines against fungal diseases. The objects of research were two species of the genus *Trichoderma*: *T. lignorum* and *T. Viridis*, to obtain biological preparations used to control major fungal diseases of grapevine (*Uncinula necator*, *Plasmopara viticola*, *Guignardia bidwelli*). The field investigations were carried out on 72 grapevines. Out of the researched *Trichoderma* species, it is the biopreparation based on *T. lignorum* in a solution of 6% that possesses pronounced antifungal properties and has an active antagonistic ability too, which even after the first 24 hours oppresses the parasitic fungi aggressively or actively within 10 days it completely cured the grapevine plants. According to our investigations, biopreparations based on *Trichoderma* are good stimulators of growth, which increase the plant size by approximately 100 %. Benefits of this project are twofold: ecological – by replacing chemicals based on copper and economical – obtained biopreparation is 3 times cheaper than chemical one and it is easier to obtain it in home conditions. Using this biopreparation we can treat grapevines and can save 100 % of grapevines harvest.

Awards Won: