

***ALCALIGENES FAECALIS* ONU 452 AS AN AGENT OF BACTERIAL BIOCONTROL AGAINST *RHIZOBIUM RADIOBACTER* C58**

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Crown gall of dicotyledonous plants causes uncontrolled tumor formation, and is among the most damaging diseases to the rural economy. The main pathogens of the crown gall are bacteria *Rhizobium vitis* and *R. Radiobacter*. (Szegeedi et al. 2005, Kawaguchi and Inoue 2009).

The use of bacterial strains with antagonistic activity against phytopathogens shows considerable promise. Unlike other chemical agents, the use of antagonistic strains does not interfere with the balance of biocenosis. The antagonists colonise plant tissues just as efficiently as the pathogens (Limanska N, 2012). *Alcaligenes faecalis* is a bacterium with known antagonistic activity (Yokoyama S, 2013).

The aim of our research was to investigate the antagonistic properties of *Alcaligenes faecalis* ONU 452 strain against the causative agent of crown gall of dicotyledonous plants *Rhizobium radiobacter* C58 in vivo by means of a model-plant.

In the present research carrot explants served as model organisms. The carrots (*Daucus carota* L.) were washed with commercial detergent “Domestos”, rinsed in running water, submerged into ethanol, flambéed, peeled and sliced (Ryder et al., 1985). The resulting slices were placed into sterile Petri dishes. The carrots were inoculated by dripping 100 mcl of phytopathogen and the antagonist mixture or phytopathogen alone, on the basal surfaces of the disks (slices).

After 21 days the explants were tested for the presence of tumors and fermentation. The number of explants with tumors was calculated. The manifestation of crown gall symptoms was assessed as follows:

“++++” 100 % of cambium ring covered with tumors, “+++” 70 % of cambium ring had tumors, “++” 50 % of cambium ring had tumors, “+” less than 20% of cambium ring covered with tumors.

The results of the study showed a decrease in the number of infected samples, namely carrot disks, by 24.8%. The explants that did develop tumors, meanwhile, displayed an inhibition of symptoms typical of crown gall in plants. In this way the number of explants decreased by 13%, in comparison with the positive control group that manifested the highest level of crown gall (“++++”) while in case of the manifestation of symptoms at “+++” – by 4.7%.

The obtained results of the phytopathogen inhibition testify to some valuable properties of *A. faecalis* ONY 452. Further studies have potential to discover possible applications of *A. faecalis* ONY 452 strain in various plants as a means of their protection against crown gall.