# INFLUENCE OF *ALCALIGENES FAECALIS* ON GROWTH ONU 452 ON WATERCRESS GROWTH CHARACTERISTICS

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Despite effectiveness of chemical pesticides and fertilizers, their usage is related to hazards to human health and environmental pollution. Bacterial pesticides are an ecological alternative to chemical ones.

Genera *Alcaligenes* have been shown to produce auxins which help in stimulating plant growth (Egamberdieva et al. 2007;). There was suggested that strain of *Alcaligenes faecalis* that produce cytokinin like compound might have a role in the growth and development of *Tabernaemonata divaricata* (Pradeepa, V., Jennifer, M. 2013;).

The aim of this study was to investigate the effect of the strain *Alcaligenes faecalis* ONU 452 on seedling growth.

Cress *Lepidium sativum L*. seeds were used as a test model. Cress seeds have been sterilized with hydrogen peroxide 25% for 1 minute, followed by washing in sterile distilled water. For inoculation cress seeds with sterilized surfaces were treated with suspensions of twenty-four hour cultures of strain *A. faecalis* ONU 452 with the following concentrations: 0.5%, 1%, 2%, 4%, 6%, 8%. Inoculation lasted 60 minutes. Inoculated seeds were left in Petri dishes for germination and initial growth. The growth of cress was evaluated after 5 days. Seeds, that were germinating in soil conditions within 48 days, were subjected to similar processing.

*In vitro* stimulation of seed germination compared to soaking in water was observed for all concentrations of bacterial suspensions, except 1% concentration and 6% (the percentage of increase ranged from 6% to 12%) In soil conditions stimulation of seed germination in comparison to soaking in water was observed for all concentrations of bacterial suspensions, except 0.5% (the percentage of increase ranged from 43.4 to 32.2%). In the case of processing only with nutrient medium stimulation growth rate was not as high as in the case of bacterial processing. In addition, 2% dilution increased length of sprout stalks on average by 38%. Processing with 6% suspension stimulated growth of roots by 61% and 4% concentration increased length of roots on average by 66.

The previous sections showed that strain of *Alcaligenes faecalis* ONU 452 has a positive effect on germination and subsequent growth of cress. This strain can be used for seed treatment before planting into the soil.