

Project Title : Investigation on Biological Control of *Erwinia carotovora* Subsp *Carotovora* on Potato With Fluorescent Pseudomonas

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Supporting Body : GDAR

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Summary : *Erwinia carotovora* subsp *carotovora* is an important disease agent of potato. This pathogen causes preemergence seed piece decay, blackleg, soft stem rot and soft rot of daughter tubers. There is not known chemical treatment. Only cultural precautions are not enough. Therefore biological control is important and succesful results have been obtained.

This study was made with fluorescent pseudomonads for biological control against *E.c.* subsp *carotovora*. Fluorescent pseudomonads were isolated from the surfaces of fresh potato tubers from commercial potato fields in the Ödemiş. These fluorescent pseudomonads were tested against *E.c.* subsp *carotovora* in vitro and in vivo.

In vitro tests, the biological control activity of 151 fluorescent pseudomonas against *E. c.* subsp *carotovora* were evaluated according to 0-5 scale. Approximately, 84 % of isolates were placed in category 2, forming inhibition zone between 3 and 9 mm.

Because of usual discordence between *in vitro* and *in vivo* tests the isolates from each category were selected for *in vivo* test. Pathogenicity tests were made with 50 selected isolates and 10 of them were found to be pathogens.

40 non-pathogenic isolates were tested for inhibition of soft rot by using the tuber slice assay. The most of isolates inhibited soft rot on slices at low rate. In the experiments with regardless variety of potato the highest inhibition rate was 52 %. However in tests carried out with variety Morfana this rate was 40 %. These results showed that inhibition of soft rot on slices by fluorescent pseudomonads varied depending on the variety of potato.