

Título: New biofertilizer with diazotrophic bacteria and fungi chitosan from *Cunninghamella elegans* protects tomato plants against bacterial wilt

Autores: Stamford, N.P. ^{*1}, Coelho, I.L. ¹, Oliveira, J.R.S. ¹, Leite, M.C.B.L. ¹, Silva, S.P. ¹, Lira Junior, M.A. ¹, Stamford, T.C.M. ²

Instituição ¹ Universidade Federal Rural de Pernambuco – Departamento de Agronomia, (Av. Dom Manoel de Medeiros, s/nº, Dois Irmãos, 52171-900, Recife – PE), ² Universidade Federal de Pernambuco – Departamento de Medicina Tropical, (Av. Cidade Universitária, s/ nº, 52900-900, Recife – PE)

Resumo:

Several pathogenic bacteria invade tomato and promote disease but the most important is certainly *Ralstonia solanacearum* (Smith) which causes tomato wilt. For satisfactory yield and fruit quality, the soil fertility and diseases need to be controlled. The aim of this paper is to evaluate the effectiveness of bioprotector that contains fungi chitosan by inoculation with *Cunninghamella elegans* as an alternative bioprotector (NPKP), which releases nutrients and induces resistance against tomato wilt caused by *Ralstonia solanacearum* bacteria. The fertilization treatments used were: 1- soluble NPK fertilizers (NPKF) in recommended rate (RR), 2 - bioprotector (NPKP) 50% RR, 3 – NPKP 100% RR, and 4 – NPKP 150% RR. Treatments without bacterial inoculation (PO) were used to evaluate the plant characteristics (plant height, shoot diameter, number of leaves, fresh and dry matter of shoots) in plants without effect of the pathogenic bacteria, and plants with bacterial inoculation (P1) used to observe the induction of resistance. Plants receiving the soluble fertilizers (NPKF) promoted had stronger disease symptoms and died in two weeks after *Ralstonia solanacearum* inoculation, and plants that received NPKP (*Cunninghamella elegans*) in rates 50, 100 and 150 % RR induced resistance for the bacterial disease and promoted better plant characteristics. The results showed that the bioprotector displays normal parameters of plant growth and may be alternative for conventional fertilizers.

Palavras-chaves: *Ralstonia solanacearum*, biopolymers, organic bioprotector, plant resistance,

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