

ACTIVITY OF E-BEAM IRRADIATION IN THE CONTROL OF *RHIZOCTONIA SOLANI*

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Rhizoctonia solani Kuhn is one of the most dangerous soil-borne pathogen caused pre- and postemergence damping-off seedlings and stem base and root rot of older plants. Infested soils or substrates and plant materials are the main source of that species. The aim of this study was to determine the influence of E-Beam irradiation of energy 10 MeV on *in vitro* and *in vivo* control of *R. solani*. Four-day-old the species cultures were irradiated with doses 0, 1.5, 3, 4.5 and 6 kGy whereas substrate from 5 to 30 kGy. Growth of cultures on treated plates and healthiness of chrysanthemum growing in irradiated substrate was estimated. Additionally, colonization of stem parts of chrysanthemum by irradiated cultures were estimated. *In vitro* application of ionizing radiation of 4-day-old *R. solani* cultures, grown on PDA medium, resulted in the lack of the species development already at dose 4.5 kGy. Inoculation of chrysanthemum stem parts with irradiated cultures resulted in the necrosis development but inocula from nontreated plates colonized plant parts significantly quicker than those treated with E-Beam. Growing of chrysanthemum cuttings in the irradiated peat resulted in the lack of stem base and leaf rot in substrate treated with doses higher than 5 kGy. On cuttings growing in composted pine bark (cpb) and its mixture with peat (1:1) disease symptoms were not observed when dose 20 kGy was applied for disinfection.

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