

Isolation and Characterization of a New Fungi Isolates of the Genus *Trichoderma* Pers. – of Potential Producers of Biofungicides

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Abstract One of the perspective directions in the plant defense against mycoses is the use of preparations based on fungi, in particular from the genus *Trichoderma* Pers. However, limiting factors for their safe application consider colonizing and fungistatic activities as well as the absence of toxic effects. The aim of this work is to search and substantiate the possibility of using new non-pathogenic isolates of fungi from the genus *Trichoderma* Pers. with a high growth speed and fungistatic activity. 97 micromycete isolates, phenotypically assigned as *Trichoderma* Pers., were isolated from the various soil samples of the Russian Federation. Based on kinetic parameters and colonizing activity, three *Trichoderma* Pers. strains (*T. cerinum* strain 84, *T. tomentosum* strain 189 and *T. asperellum* strain 195) were selected to check their toxic effects in vivo model (rats). It was shown that *per os* application LD50 exceed dose $1.0 \pm 0.001 \times 10^8$ spores per kg, no cumulative effect was found after 8 weeks' exposure

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of suspension at dose $1.0 \pm 0.001 \times 10^7$ spores / kg and skin irritating effect at dose $0.25 \pm 0.001 \times 10^8$ spores / kg. The results show the prospects for further study of the properties of *T. cerinum* strain 84, *T. tomentosum* strain 189 and *T. asperellum* strain 195 with the aim of creating biofungicides.

Keywords Trichoderma • Growth speed • Biofungicide • Fungistatic activity • Acute toxicity • Cumulative effect