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THE EFFECT OF *GLIOCLADIUM CATENULATUM* J1446 TO THE RESPIRATION RATE OF THE BUMBLE BEE *BOMBUS TERRESTRIS*

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Increasing use of agrochemicals has led to pesticide residues in food and environment, has caused resistance problems in the control of many plant pests and diseases. An alternative to chemical spraying is to use bees to disperse biological control agents, however, the effects of such biocontrol agents to bumble bees, which are important pollinators of agricultural and natural ecosystems, are relatively little studied. Prestop Mix is a biofungicide that contains spores of the naturally occurring parasitic fungus *Gliocladium catenulatum* J1446. There is no information about the effects of *G. catenulatum* to the respiratory system of bees, which is one of the most vulnerable targets of most contemporary pesticides. Therefore our goal was to study the effect of *G. catenulatum* J1446 to the respiration rate of bumble bees. We conducted laboratory experiments with commercially produced *Bombus terrestris* colonies. For the oral treatments the test bumble bees were fed for three weeks with a mix of pollen, sugar solution and the Prestop Mix preparation, whereas the control bees were fed with pollen and sugar solution only. For the contact treatments the test bumble bees were dusted with Prestop Mix powder, whereas the control bees remained untreated. An infrared gas analyzer (Infralyt-4, VEB, Junkalor, Dessau) was used to measure the respiration rate of test and control bees by recording the amount of CO_2 release (VCO_2 ml h^{-1}). Preliminary results of the laboratory tests show that dusting bumble bees with the Prestop Mix powder lowered the respiration rate of treated bees, whereas feeding bumble bees with the Prestop Mix preparation had no effect on the respiration rate of the treated bees.