

## **Título: POTENTIAL OF SOIL FUNGI FROM THE RIVER BASIN OF MUTUMPARANÁ-RO FOR THE BIOCONTROL OF PHYTOPATHOGENIC FUNGI OF THE STRAWBERRY CROP**

**Autores** Cerqueira, A.E.S. <sup>1</sup>, Silva, T.H. <sup>1</sup>, Costa, K.C.S. <sup>1</sup>, Nunes, A.C.S. <sup>2</sup>, Nunes, D.D. <sup>2</sup>, De Paula, S.O. <sup>3</sup>, Zambolim, L. <sup>4</sup>, Kasuya, M.C.M. <sup>1</sup>, , Silva, C.C. <sup>1</sup>,

**Instituição** <sup>1</sup> Departamento de Microbiologia, UFV - Universidade Federal de Viçosa (Avenida Peter Henry Rolfs, s/n - Campus Universitário, Viçosa - MG, 36570-900), <sup>2</sup> UNIR – Universidade Federal de Rondônia, <sup>3</sup> Departamento de Biologia Geral, UFV – Universidade Federal de Viçosa, <sup>4</sup> Departamento de Fitopatologia, UFV – Universidade Federal de Viçosa

### **Resumo:**

Environmental damage caused by the use of pesticides have spurred the adoption of more environmentally friendly practices, including the application of microorganisms and their metabolites for the biological control of plant pathogens. In this context, the prospection of microorganisms is an important aspect towards the obtention of potential biocontrol agents of agricultural and forestry diseases. The advancement of livestock on areas of the hydrographic basins of Mutumparaná river in Rondônia, is leading to the conversion of the open ombrophilous forest into pasture areas. The alteration of the microbiota by this process can lead to loss of biological resources with great biotechnological potential. In order to isolate and select fungi able to biocontrol of diseases, soil samples from forest and pasture areas surrounding the Mutumparaná river basin were subjected to serial dilution and plating at Potato Dextrose Agar (PDA) medium plus antibiotic chloramphenicol. Fungal mycelia discs of colonies grown on the medium were transferred to new petri dishes containing PDA allowing the obtention of isolated colonies. Subsequently, aimed at screening for antagonists fungi, 10 randomly selected isolates, underwent *in vitro* double culture assays against important pathogens of strawberry crop, *Colletotrichum acutatum*, which causes anthracnose, and *Botrytis cinerea*, which causes gray mold. Therefore, Petri dishes containing PDA culture medium were inoculated with a 6mm pathogen mycelial disc at about 1 cm from the edge of the plate. On the opposite side of the plates, it was inoculated a mycelium disc of the fungal isolate to be evaluated. The control plate was constituted of a pathogen mycelial disc and a non colonized BDA medium disc in its opposite side. The tests were conducted in triplicate and extended until the control plates were fully colonized. It was observed that 80% of isolates had antagonistic potential to *B. cinerea* and 60% to *C. acutatum*. The percentage of growth inhibition reached 58% for *B. cinerea* and 60% for *C. acutatum*. Among the observed interactions, in both tests were detected isolates capable of carrying out the hiperparasitism, antibiosis and competition for substrate against the pathogens. Thereby, these results show that initial indicative of the potential use of these isolates and their metabolites for the biocontrol of phytopathogenic fungi of strawberry crop, could be visualized.

**Palavras-chaves:** antagonism, *B. cinerea*, biological control, *C. acutatum*, double culture assay

**Agência Fomento:** CNPq, CAPES