EVALUATION OF *IN VITRO* ANTIFUNGAL ACTIVITY OF DIFFERENT PLANT EXTRACTS FOR THE INHIBITION OF *Colletotrichum gloeosporioides*, CAUSING BANANA ANTHRACNOSE

A.R. Fathima Lufna* and K. Prasannath

Department of Agricultural Biology, Faculty of Agriculture, Eastern University, Sri Lanka

Abstract

At present, there is a widespread requirement for environment–friendly approaches to the production of quality and healthy food to ensure food security and sustainability in agriculture. Efforts are underway for sustainable crop production with organic fungicides and botanicals from natural resources to reduce the usage of synthetic fungicides to control postharvest diseases. The present study evaluated the efficacy of different plant extracts on the inhibition of *Colletotrichum gloeosporioides*, a fungus causing banana anthracnose. The selected plant extracts, such as *Piper longum*, *Acorus calamus*, *Allium sativum* and *Citrus limon,* were investigated in this experiment along with a control. The experiments were laid out in a Completely Randomized Design. Mycelial inhibition percentage was recorded eight days after inoculation. The findings showed that *A. calamus* exhibited the highest mycelial inhibition percentage (100%) among the plant extracts tested. Further, the least concentration of methanolic *A. calamus* extract for complete inhibition of *C. gloeosporioides* was 2%. Therefore, *A. calamus* could be used as an alternative to synthetic fungicides to combat *C. gloeosporioides* infection on banana. Hence, this treatment could be an ecologically acceptable non-fungicidal approach for managing postharvest anthracnose disease of banana.

Keywords: *Acorus calamus* extract, Garlic extract, Lemon extract, Mycelial inhibition percentage, *Piper longum* extract, Postharvest disease

**Corresponding author: lufnaaaauytt@gmail.com*