

Abstract

An isolation of both pathogenic fungi and native bacteria from papaya was realized. During these essays, three out of the fire fungi founded in situ were considered as primary infection agents, these being later identified as *Aspergillus* sp. (H1), *Penicillium* sp. (H3) and *Colletotrichum* sp. (H5) after pathogenicity tests fulfilled Koch postulates. From the five bacterial genres isolated, two of these were considered as enteric bacteria after proper biochemical test were done, leaving *Bacillus* sp. (B1), *Pseudomonas* sp. (B3) and *Pseudomonas* sp. (B5) as potential biocontrol agents against fungi. *In vitro* test showed that all of the bacterial genres used as biocontrol managed to inhibit all pathogens, but showing different inhibitory mechanisms. During *In vivo* tests, *Pseudomonas* sp. (B3) fail to control any of the three primary pathogens. However *Bacillus* sp. demonstrated control against H1 and H3 but not against H5. On the other hand, *Pseudomonas* sp. (B5) only controlled H5. Thus, in order to obtain full control of all the pathogens, a mix of B1+B5 was used with a complete inhibition of all pathogens during *In vivo* tests as a result The synergic effect reached with this mix ensures no resistance development from the pathogen, which is an advantage against the use of chemical control.