

Abstract

Surveying grey-mold caused by *Botrytis cineria* in cutting roses were done at the Royal Project Foundation, in four stations which included AngKhang Royal Agricultural Station, Inthanon, Pang Da and Royal project Development Center. These investigations found the percentage of disease evident occurring in all observing area between 0.17-16.67. Antagonistic microbe, endophytic actinomycetes (EA) and yeast, collecting in numbers of 160 isolates were used to inhibit gray mold on Avalanche roses. Results, EA isolate CEN26 was selected as antagonist inhibiting the percentages of pathogen growth and disease incidence more than 75 percent. The most suitable media for multiplication of EA isolate CEN26 was Soytone liquid media at pH 7, the concentration at 4.0×10^{10} cfu/ml for 3 days. For produce spore mass was cultured EA isolate CEN26 with 1 ml of molasses and 3 ml of Molass yeast liquid. The best growth was observed. The number of spores was 1.9×10^{10} spores per plate after culture on 5 days in room temperature. Then the spore mass of CEN26 was mixed with talcum powder and adjust the concentration at 4.0×10^{11} cfu/ml for bioproducts production in the future. The proper formula would be selected by the bio-product powder properties, losses, fine, dry, water soluble and conc. of isolate CEN26 spore and disease inhibition percentages. Results showed bio-product formula 2 was qualified for controlling gray mold disease. The application rate was 7.5 g/ 20 l and spray every three days, which was the best effectiveness to inhibit the disease symptom reduction for 78.85 percentage compared to the control trial. The cost per unit area of bio-product was cost for 0.144 baht/m². Comparing, the cost per unit area of marketed bio-product *Trichoderma harzianum* (20 g/20 l, 2 time spraying, 65.93% disease inhibiting) was 078 baht/m². and the chemical fungicide mancozeb (recommended rate, 1 time spraying, 93.77% disease inhibiting) was 0.052 baht/m².

Keywords: Rose, Gray Mold, Bio-pesticide, *Botrytis*, biological control