

Ratchanok Piwtamai 2014: Production of *Beauveria bassiana* and *Chaetomium globosum*
Bio-agent for Field Application. Master of Science (Plant Pathology), Major Field: Plant Pathology,
Department of Plant Pathology. Thesis Advisor: Assistant Professor Chainarong Rattankreetakul,
Dr.sc.agr. 90 pages.

The growth and sporulation stimulant substances to the beneficial fungi *Beauveria bassiana* and *Chaetomium globosum* were investigated. The purpose of this study was to develop the knowledge for biopesticide production. The result showed that *B. bassiana* mycelium on potato dextrose agar (PDA) at pH 9.0 was grew faster than on PDA pH 5.5. Fructose and KNO_3 as crucial carbon and nitrogen sources could induced higher sporulation when compared with the basal medium as control. *C. globosum*, growth on the yeast peptone agar and PDA with 0.2 % chitosan showed greater than those on PDA (control) with the optimal pH ranges of 5.5-6.0. Cellulose, as carbon source and asparagine, as nitrogen source were supporting to growth and sporulation of *C. globosum*. From the results, the modified media were developed. Potato fructose agar with KNO_3 was increased the fungal growth and sporulation for *B. bassiana* higher than other treatments. For *C. globosum*, potato cellulose agar with 0.2% chitosan was propered for growth and sporulation indicated to the greatest results compared with other treatments. The outcome of the study could be used to promote fungal spore of *B. bassiana* and *C. globosum* for the produce of biopesticide product.

Maize was found to be a good natural substance for *B. bassiana* and *C. globosum* culture to increase the quantity of mycelia and spore . The culture was set at room temperature under cool white fluorescent light for a period of 21 days which was appropriated to increase the amount of beneficial fungi . The addition of carbon or nitrogen sources show no stimulant to the amount of *B. bassiana* numbers, but they showed an effect to increase the amount of fungus *C. globosum* during the first 14 days of culture.

To production of dry formulation biopesticide of *B. bassiana* and *C. globosum* was studied. The result revealed that the blended of talc and the grinding of the infected with *B. bassiana* and *C. globosum* maize showed the good fungal viability with 90 days for *B. bassiana* and 120 days for *C. globosum*. The microbial pellet was performed with the binder polyvinyl pyrrolidone K30 (PVP K30). Both *B. bassiana* and *C. globosum* showed a good viability to 30 days of the tested period.

Student's signature

Thesis Advisor's signature