

Nutjaree Paela 2013: Effects of Fungal Bioactive Compounds on Inhibition of Weeds Seed Germination and Seedling Growth in Organic Farming' s Soils. Master of Science (Soil Science), Major Field: Soil Science, Department of Soil Science. Thesis Advisor: Assistant Professor Savaporn Supaphol, Ph.D. 102 pages.

Identification of fungal isolated from infected weeds (leaf spot and leaf blast symptom) using morphology and genotype characteristics were studied. Isolated fungal were identified into 3 genera and 6 species consisting of *Curvularia clavata* *Curvularia penniseti* *Drechslera rostrata* *Drechslera erythrospila* *Fusarium semitectum* and *Fusarium solani*. And fungal bioactive compounds were examined to inhibited weed seed germination by culture crudes and filtrates. The results showed that both culture crudes and filtrates were completely inhibited weeds seed germination. Therefore, culture filtrates were selected to find the appropriated concentration. It was found that weeds seed germination were inhibited by the culture filtrates (diluted 1:1) but no affected to inhibited seed germination of crops. The effects of bioactive compounds of fungal on inhibition of weeds seed germination and seedling growth in the soil series such as Kamphaeng Phet Kamphaeng Saen Tha Muang and Bang Khen were determined. In Bang Khen series, *Drechslera erythrospila* fungal and *Fusarium semitectum* fungal inhibited significantly different to seed germination of *Eleusine indica*, *Trianthema portulacastrum* and *Amaranthus lividus* by 55-65 %, 61-78 % and 85-100 %, respectively. In addition, *Drechslera erythrospila* inhibited seedling growth of *Trianthema portulacastrum* and *Amaranthus lividus* by 83 % and 68%, respectively, whereas, no affected seeds germination and seedling growth of tomato and chaineese cabbage. In closed system, bioactive compounds were adsorbed by soil separates. In Bang Khen series, silty clay texture was very effective to inhibited seed germination and seedling growth by bioactive compounds absorbtion due to high clay and Cation Exchange Capacity (CEC).

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Thesis Advisor's signature