

## INTISARI

Kompos mengandung ragam jenis dan jumlah mikroorganisme termasuk aktinomisetes. Sebagian aktinomisetes memiliki daya antagonistik terhadap patogen tanaman. Penelitian ini bertujuan untuk mengisolasi dan mengidentifikasi aktinomisetes dari kompos yang memiliki kemampuan antagonistik terhadap *Rhodococcus fascians* dan *Streptomyces puniscabiei*. Isolasi aktinomisetes dari kompos media Jamur Kancing dilakukan dengan metode *pour plating* pada medium SNA (*Starch Nitrate Agar*) dan NA (*Nutrient Agar*). Seleksi dilakukan dengan uji antagonistik menggunakan metode *dual culture-streaking* dan *well diffusion*. Isolat terpilih diidentifikasi secara molekuler berdasarkan sekuen gen 16S rDNA. Hasil penelitian diperoleh 4 isolat yakni 5A, 14A, 19A, dan 30A yang memiliki aktivitas antagonistik prospektif berdasarkan uji antibiosis dan/atau kompetisi nutrisi. Menurut sekuen 16S rDNA, isolat 5A, 14A, 19A, dan 30A berturut-turut teridentifikasi sebagai *Streptomyces variabilis*, *Streptomyces diastaticus*, *Streptomyces thermocoprophilus*, dan *Streptomyces thermospinosporus*.

Kata kunci: Kompos, isolasi, identifikasi, aktinomisetes, aktivitas antagonistik

### ***ABSTRACT***

Compost contains various types and numbers of microorganisms including actinomycetes. Some actinomycetes have antagonistic activity against plant pathogens. This study aimed to isolate and identify actinomycetes from compost which have antagonistic ability against *Rhodococcus fascians* and *Streptomyces puniceus*. Isolation of actinomycetes from compost of *Agaricus bisporus* growing media was carried out using the pour plating method on SNA (Starch Nitrate Agar) and NA (Nutrient Agar) media. Selection was done by antagonistic test using dual culture-streaking and well diffusion methods. Selected isolates were identified molecularly based on the 16S rDNA gene sequence. The results showed that 4 isolates namely 5A, 14A, 19A, and 30A which have prospective antagonistic activity based on the antibiosis and/or nutritional competition tests. According to the 16S rDNA sequence, isolate of 5A, 14A, 19A, and 30A was identified as *Streptomyces variabilis*, *Streptomyces diastaticus*, *Streptomyces thermophilus*, and *Streptomyces thermospinosporus*, respectively.

Keywords: Compost, isolation, identification, actinomycetes, antagonistic activity