

ABSTRAK

ISOLASI DAN IDENTIFIKASI JAMUR PADA PRODUK PUPUK ORGANIK CAIR (POC) SERTA UJI ANTAGONISME TERHADAP *Fusarium oxysporum*

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Pada masa pertumbuhan tanaman, petani sering kali mengalami fenomena yang dinamakan penyakit kuning atau *yellow disease*. Hal ini dapat terjadi dikarenakan adanya Organisme Pengganggu Tanaman (OPT) yang berasal dari jamur *Fusarium oxysporum*. Penelitian ini bertujuan untuk mengisolasi dan mengidentifikasi jamur yang terkandung dalam Pupuk Organik Cair, menguji kemampuan antagonismenya melawan jamur *Fusarium oxysporum*, dan mengetahui jamur yang memiliki kemampuan baik dalam menghambat pertumbuhan jamur *Fusarium oxysporum*. Metode yang digunakan yaitu mengisolasi jamur pada Pupuk Organik Cair dan cabai, mengidentifikasi jamur berdasarkan karakter morfologinya menggunakan mikroskop dan menguji antagonisme dengan menggunakan metode *dual culture* (jamur patogen dan jamur antagonis ditumbuhkan secara bersamaan). Hasil isolasi dan identifikasi diperoleh 4 isolat jamur, yaitu isolat FPC-1 (jamur *Aspergillus clavatus*), isolat FPC-2 (jamur *Penicillium sp.*), isolat FPC-3 (jamur *Trichoderma koningii.*), dan isolat FPC-4 (jamur *Aspergillus niger*). Hasil uji antagonisme menunjukkan bahwa isolat dengan kode FPC-2 dan FPC-3 memiliki kemampuan sangat baik dalam menghambat pertumbuhan jamur *Fusarium oxysporum*. Isolat FPC-1, FPC-2, FPC-4 dan kontrol positif bersifat fungistatik sedangkan isolat FPC-3 bersifat fungisidal. Berdasarkan mekanismenya dalam menghambat pertumbuhan jamur *Fusarium oxysporum*, isolat FPC-1, FPC-4 dan kontrol positif mengalami antibiosis, FPC-2 mengalami kompetisi, dan FPC-3 mengalami parasitisme.

Kata kunci : *Fusarium oxysporum*, Pupuk Organik Cair, Uji Antagonis

ABSTRACT

ISOLATION AND IDENTIFICATION OF FUNGAL IN LIQUID ORGANIC FERTILIZER PRODUCTS AND ANTAGONISM TEST AGAINST *Fusarium oxysporum*

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During the plant growth phase, farmers often encounter a phenomenon known as yellow disease. This condition occurs due to the presence of Plant Pest Organisms (PPO), particularly the fungus *Fusarium oxysporum*. This study aims to isolate and identify fungi present in Liquid Organic Fertilizer (LOF), evaluate their antagonistic potential against *Fusarium oxysporum*, and determine the fungal isolates with the best inhibitory effects on *Fusarium oxysporum* growth. The methodology involved isolating fungi from LOF and chili plants, identifying fungal species based on their morphological characteristics using a microscope, and testing antagonism through the dual culture method, where both the pathogenic and antagonistic fungi were grown together. The isolation and identification process yielded four fungal isolates: Isolate FPC-1 (*Aspergillus clavatus*), Isolate FPC-2 (*Penicillium* sp.), Isolate FPC-3 (*Trichoderma koningii*), Isolate FPC-4 (*Aspergillus niger*). The antagonistic test results indicated that isolates FPC-2 and FPC-3 exhibited strong inhibitory effects on *Fusarium oxysporum* growth. Isolates FPC-1, FPC-2, FPC-4, and the positive control exhibited fungistatic properties, whereas isolate FPC-3 exhibited fungicidal properties. Based on their inhibitory mechanisms against *Fusarium oxysporum*, isolates FPC-1, FPC-4, and the positive control demonstrated antibiosis, FPC-2 exhibited competition, and FPC-3 exhibited parasitism.

Keywords : *Fusarium oxysporum*, Liquid Organic Fertilizer, Antagonism Test