

ABSTRAK

Febry Indriani Syafitri, NIM 4162220002 (2021). Isolasi dan Seleksi Jamur Filosfer pada Padi (*Oryza sativa* L. cv. Hawang) Organik dan Anorganik yang Berpotensi sebagai Agen Hayati.

Jamur filosfer mempunyai peran penting dalam pertumbuhan tanaman, salah satunya sebagai agen pengendali hayati/biokontrol alami. Memahami komposisi dan dinamika jamur filosfer pada tanaman akan membantu mengurangi penggunaan bahan-bahan kimia berbahaya pada pertanian. Tetapi, informasi mengenai jamur filosfer pada tanaman dan aktivitas antagonisnya masih sangat terbatas, terutama pada tanaman padi. Penelitian ini bertujuan untuk mengetahui keberadaan jamur yang ada di filosfer padi sistem organik dan anorganik, mengkaji kemampuan antagonis, dan mengidentifikasi jamur yang berpotensi sebagai agens pengendalian hayati. Isolasi jamur filosfer pada daun padi dilakukan dengan *pour plate method*. Pengujian aktivitas antagonisme menggunakan metode *dual culture* dan difusi agar. Metode *dual culture* digunakan untuk mengetahui sifat antagonis jamur berupa kopetisi ruang dan nutrisi, aktivitas antibiosis, dan juga parasitisme. Metode difusi agar digunakan untuk mengetahui sifat antibakteri isolat jamur filosfer. Pengamatan makroskopis dilakukan dengan mengamati morfologi kasat mata koloni jamur filosfer. Pengamatan mikroskopis isolat jamur potensial menggunakan metode *micro culture*. Identifikasi sampai tingkat genus mengacu pada buku Barnett dan Hunter (1972) dan buku Gandjar (2000). Hasil isolasi diperoleh 26 isolat jamur dari filosfer padi sistem organik dan 14 isolat jamur dari filosfer padi sistem anorganik. Hasil uji antagonis didapat 3 isolat jamur potensial, 2 isolat dengan aktivitas antagonis tertinggi berasal dari filosfer daun padi sistem organik dan 1 isolat berasal dari filosfer daun padi sistem anorganik. Isolat yang memiliki aktivitas antagonime tertinggi 2 diantaranya termasuk ke dalam genus *Aspergillus*, dan satu isolat termasuk ke dalam genus *Rhizoctonia*. Jamur filosfer yang sudah teridentifikasi dapat dikembangkan menjadi biopestisida alami dan diharapkan dapat menekan penggunaan bahan-bahan kimia berbahaya pada lahan pertanian

Kata Kunci: Agen pengendali hayati, anorganik, antagonisme, jamur filosfer, organik

ABSTRACT

Febry Indriani Syafitri, NIM 4162220002 (2021). Isolation and Selection of Philosphere Fungi in Organic and Anorganic Rice (*Oryza sativa* L. cv Hawang) Potential as Biological Agents

Philosphere fungi have an important role in plant growth, one of which is as a biological control agent / natural biocontrol. Understanding the composition and dynamics of phylosphere fungi in plants will help reduce the use of hazardous chemicals in agriculture. However, information about phylosphere fungi in plants and their antagonistic activity is still very limited, especially in rice plants. This study aims to determine the presence of fungi in the organic and inorganic systems of rice philosphere, assess their antagonistic ability, and identify potential fungi as biological control agents. Isolation of philosphere fungi on rice leaves was carried out using the pour plate method. Testing of antagonistic activity using dual culture methods and agar diffusion. The dual culture method was used to determine the antagonistic properties of fungi in the form of space and nutrient competition, antibiotic activity, and also parasitism. The agar diffusion method was used to determine the antibacterial properties of the philosphere fungal isolates. Macroscopic observations were carried out by observing the visible morphology of the philosphere fungal colonies. Microscopic observation of potential fungal isolates using the micro culture method. Identification to the level of genus refers to the book Barnett and Hunter (1972) and the book Gandjar (2000). The isolation results obtained 26 fungal isolates from the organic system rice philosphere and 14 fungal isolates from the inorganic system rice philosphere. The antagonist test results obtained 3 isolates of the most potential fungi, 2 isolates with the highest antagonistic activity came from the organic system of rice leaf philosphere and 1 isolate from the inorganic system of rice leaf philosphere. Two of the isolates that had the highest antagonism activity belonged to the *Aspergillus* genus, and one isolate was included in the genus *Rhizoctonia*. Phylosphere fungi that have been identified can be developed into natural biopesticides and are expected to reduce the use of hazardous chemicals on agricultural land.

Keywords: Anorganic, antagonism, biological control agens, organic, philosphere fungi