

RINGKASAN

Peran degradasi bahan organik di dalam tanah tidak lepas dari mikroorganisme, di antaranya jamur dan bakteri. Jamur dapat membantu proses kesuburan tanah, khususnya pada tanah lahan pertanian. Inventarisasi jamur tanah dari lahan pertanian dapat membantu memberikan informasi tentang keragaman dan indeks biodiversitas jamur mikroskopis. Lahan pertanian dengan jenis tanaman yang berbeda, memiliki keragaman jamur tanah yang berbeda. Berdasarkan hal tersebut, dilakukan penelitian dengan tujuan yaitu (1) mengetahui genera jamur tanah pada lima jenis tanaman budidaya dominan di Purwokerto, dan (2) mengukur indeks biodiversitas jamur tanah pada lima lahan pertanian di Purwokerto.

Lahan pertanian yang digunakan antara lain: padi, jagung, singkong, kacang tanah, dan ubi jalar. Penelitian ini dilakukan dengan metode survai. Teknik pengambilan sampel tanah yaitu dengan *purposive random sampling*. Isolasi jamur dilakukan dengan metode pengenceran bertingkat dan tanam langsung. Sampel tanah yang diperoleh dilakukan pengenceran bertingkat hingga 10^{-5} , selanjutnya dilakukan isolasi dan purnian pada medium PDA. Jamur yang diperoleh diidentifikasi berdasarkan karakter makromorfologi dan mikromorfologi dengan menggunakan buku kunci identifikasi. Analisis data dilakukan secara deskriptif kualitatif dan kuantitatif. Analisis deskriptif kualitatif digunakan untuk mengetahui genera dan karakteristik morfologi dari jamur tanah, analisis kuantitatif digunakan untuk mengetahui indeks biodiversitas jamur pada tanah lahan pertanian.

Hasil penelitian dapat diketahui bahwa terdapat 21 genera yang ditemukan pada tanah lima lahan pertanian di Purwokerto, yaitu *Penicillium* 1, *Penicillium* 2, *Penicillium* 3, *Penicillium* 4, *Trichoderma*, *Aspergillus* 1, *Aspergillus* 2, *Mycotypha*, *Aureobasidium*, *Cylindrocarpon*, *Chaetomium*, *Mucor* 1, *Mucor* 2, *Gliocladium*, *Curvularia*, *Fusarium*, *Oidiodendron*, *Bipolaris*, *Acremonium*, *Botrytis*, *Paecilomyces*. Indeks biodiversitas (H') yang diperoleh yaitu pada tanaman jagung sebesar 2,063, tanaman kacang tanah sebesar 1,196, tanaman ubi jalar sebesar 1,194, tanaman singkong sebesar 1,514, dan tanaman padi sebesar 1,108 sehingga kelima lahan pertanian mempunyai nilai keragaman sedang.

Kata kunci : Keragaman, Jamur, Tanah Lahan Pertanian

SUMMARY

Degradation process of organic compound in soil is can not be separated by microorganism role, including fungi and bacteria. Fungi can help the process of soil fertility, especially on agricultural land. Inventory of soil fungi from agricultural land can help to provide information about diversity and biodiversity index of microscopic fungi. Agricultural land with different types of plants, has a different diversity of soil fungi. Refer to that mentioned, this research was conducted with the objectives of (1) knowing the genera of soil fungi on five dominant plants in Purwokerto, and (2) measuring the index of soil fungi biodiversity on five agricultural land in Purwokerto.

Agricultural land used include: rice, corn, cassava, peanuts, and sweet potatoes. This research was conducted by survey method. Soil sampling technique was done by purposive random sampling. Fungi isolation was done by multilevel dilution method and direct planting. The soil samples obtained were diluted up to 10^{-5} dilutions, followed by isolation and purification on PDA medium. The fungi obtained were identified by macromorphological and micromorphological characters using book of identification key which are Domsch et al. (1993), Barnett & Hunter (1972), and Watanabe (2002). Data analysis was done descriptively both qualitative and quantitative. Qualitative descriptive analysis was used to determine the genera and morphological characteristics of soil fungi, quantitative analysis was used to determine the index of fungus biodiversity on agricultural land.

The results revealed that there were 21 genera found on five soil of agricultural land in Purwokerto, namely *Penicillium* 1, *Penicillium* 2, *Penicillium* 3, *Penicillium* 4, *Trichoderma*, *Aspergillus* 1, *Aspergillus* 2, *Mycotypha*, *Aureobasidium*, *Cylindrocarpon*, *Chaetomium*, *Mucor* 1, *Mucor* 2, *Gliocladium*, *Curvularia*, *Fusarium*, *Oidiodendron*, *Bipolaris*, *Acremonium*, *Botrytis*, *Paecilomyces*. Biodiversity index which obtained in corn plant is 2,063, peanut plant is 1,196, sweet potato plant is 1,194, cassava is 1,514, and rice plant is 1,108, therefore those five agricultural land have moderate diversity value.

Keywords: Diversity, Fungi, Soil of Agricultural Land