

Arina Putri Ramadhani, 2019, **Isolasi dan Uji Potensi Kapang Pelarut Fosfat dan Dekomposer Bahan Organik dari Tanah Rhizosfer *Mangrove Center Tuban***. Skripsi ini di bawah bimbingan Prof. Dr. Ir. Tini Surtiningsih, DEA. dan Dr. Ni'matuzahroh. Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

---

### ABSTRAK

Penelitian ini bertujuan untuk mengetahui jumlah isolat kapang dari tanah rhizosfer *Mangrove Center Tuban* dan isolat kapang yang berpotensi sebagai pelarut fosfat dan dekomposer bahan organik, mengukur indeks pelarut fosfat dan hidrolisis bahan organik (amilolitik, lipolitik, dan proteolitik) paling tinggi, dan menentukan genus isolat kapang pelarut fosfat dan dekomposer bahan organik dari tanah rhizosfer *Mangrove Center Tuban*. Penelitian ini bersifat eksploratif. Sampel tanah diambil menggunakan metode *purposive sampling* di 2 lokasi. Isolasi dan purifikasi kapang menggunakan media *Potato Dextrose Agar* yang ditambahkan *chloramphenicol* 1%. Karakterisasi makroskopis pada media *Potato Dextrose Agar* dan karakterisasi mikroskopis dengan *slide culture*. Uji potensi menggunakan metode totol. Uji potensi kapang pelarut fosfat menggunakan media *Pikovskaya* selama inkubasi 3 hari. Uji potensi kapang dekomposer bahan organik yaitu amilolitik menggunakan media *Amilum Agar* selama inkubasi 5 hari, lipolitik menggunakan media *Rhodamin-B Olive Oil* selama inkubasi 4 hari, dan proteolitik menggunakan media *Skim Milk Agar* selama inkubasi 4 hari. Data yang diperoleh dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa isolat kapang dari hasil isolasi pada tanah rhizosfer *Mangrove Center Tuban* sebanyak 27 isolat terdiri atas 25 isolat kapang pelarut fosfat, 16 isolat kapang amilolitik, 20 isolat kapang lipolitik, dan 11 isolat kapang proteolitik. Kapang pelarut fosfat yang memiliki indeks pelarut fosfat paling tinggi adalah isolat LIa.12 sebesar 1,658. Kapang amilolitik yang memiliki indeks amilolitik paling tinggi adalah isolat LIa.1 sebesar 1,072. Kapang lipolitik yang memiliki indeks lipolitik paling tinggi adalah isolat LIa.11 sebesar 0,421. Kapang proteolitik yang memiliki indeks proteolitik paling tinggi adalah LIa.12 sebesar 0,347. Genus kapang pelarut fosfat dan dekomposer bahan organik dari tanah rhizosfer *Mangrove Center Tuban* adalah *Aspergillus*, *Penicillium*, *Trichoderma*, *Gliocladium*, dan *Rhizopus*.

*Kata Kunci: isolasi, kapang, pelarut fosfat, lipolitik, amilolitik, proteolitik, karakterisasi, tanah, Mangrove*

Arina Putri Ramadhani, 2019, **Isolation and Potential Test of Phosphate Solubilizing and Organic Decomposer Molds from Rhizosfer Soil of *Mangrove Center Tuban***. This thesis under the guidance of Prof. Dr. Ir. Tini Surtiningsih, DEA. and Dr. Ni'matuzahroh. Bachelor Biology Study Program, Departement of Biology, Faculty of Sains and Technology, Universitas Airlangga, Surabaya.

---

### ABSTRACT

This research aims to determine the amount of mold isolates from rhizosfer soil *Mangrove Center Tuban* and potential mold isolates as phosphate solubilizing and organic decomposers, measure the highest index of phosphate solubilizing and hydrolysis of organic matter (amylolytic, lipolytic, and proteolytic), and determine genera of phosphate solubilizing and organic decomposer mold isolates from rhizosphere soil of *Mangrove Center Tuban*. This was an explorative research. Sample was taken using purposive sampling method in 2 location. Isolation and purification of mold used Potato Dextrose Agar medium which was added chloramphenicol 1%. Macroscopic characterization of Potato Dextrose Agar medium and microscopic characterization of slide culture. Potential test used the spott method. Potential test of phosphate solubilizing mold used Pikovskaya medium for 3 day incubation. Potential tests of organic decomposer mold such as amylolytic mold used Amylum Agar medium for 5 day incubation, lipolytic mold used Rhodamin-B Olive Oil Agar medium for 4 day incubation, and proteolytic mold used Skim Milk Agar medium for 4 day incubation. The datas obtained was analyzed descriptive. The results showed that mold isolates obtained from rhizosphere soil of *Mangrove Center Tuban* were 27 isolates such as 25 isolates of phosphate solubilizing mold, 16 isolates of amylolytic mold, 20 isolates of lipolytic mold, and 11 isolates of proteolytic mold. Phosphate solubilizing mold which had the highest phosphate solubilizing index were LIa.12 isolate of 1,658. Amylolytic mold which had the highest amylolytic index were LIa.1 isolate of 1.072. Lipolytic mold which had the highest lipolytic index were LIa.11 isolate of 0.421. Proteolytic mold which had the highest proteolytic index were LIa.12 isolate of 0.347. Generas of phosphate solubilizing and organic decomposer mold from rhizosphere soil of *Mangrove Center Tuban* were *Aspergillus*, *Penicillium*, *Trichoderma*, *Gliocladium*, and *Rhizopus*.

Keywords: Isolation, Mold, Phosphate solubilizing, Lipolytic, Amylolytic, Proteolytic, Characterization, Soil, Mangrove