RINGKASAN

Pembangunan Tempat Pengolahan Sampah Terpadu (TPST) Rempoah merupakan salah satu usaha dalam mengurangi volume jumlah sampah. Hasil pengolahan sampah organik di TPST Rempoah kemudian ditumpuk di ruang terbuka hingga menjadi kompos. Tumpukan sampah organik tersebut memungkinkan adanya kandungan selulosa yang tinggi dan berpotensi terdapat jamur selulolitik yang beragam di dalamnya. Tujuan dari penelitian ini adalah untuk mengetahui isolat jamur yang memiliki potensi selulolitik asal TPST Rempoah dan mengetahui isolat jamur terbaik dalam mendegradasi selulosa. Penelitian ini dilakukan di Laboratorium Mikologi dan Fitopatologi Fakultas Biologi Universitas Jenderal Soedirman pada Maret hingga Agustus 2022.

Penelitian ini dilakukan dengan metode survei kualitatif dan survei kuantitatif. Metode survei kualitatif digunakan untuk mendapatkan isolat jamur dan metode survei kuantitatif untuk menguji potensi selulolitik dan kemampuan isolat jamur dalam mendegradasi selulosa. Hasil penelitian didapatkan 6 isolat jamur selulolitik. Isolat jamur yang memiliki indeks selulolitik tertinggi dan dilanjutkan ke uji aktivitas selulase kuantitatif. Dari hasil penelitian didapatkan kesimpulan bahwa 6 isolat jamur selulolitik dari Genus *Aspergillus* yang berhasil diisolasi dari TPST Rempoah. Aktivitas selulase terbaik diperoleh oleh *Aspergillus* RB1 pada hari ke-4, yaitu sebesar 17,92 U/ml.

Kata kunci: *degradasi, jamur, sampah organik, selulosa, selulolitik, TPST*

SUMMARY

The construction of the Tempat Pengolahan Sampah Terpadu (TPST) Rempoah is one of the solution to reduce the volume of the amount of waste. The results of processing organic waste at the TPST Rempoah are then stacked in an open space to become compost. The pile of organic waste allows for high cellulose content and has the potential to contain various cellulolytic fungi in it. The purpose of this study was to determine the fungal isolates that have cellulolytic potential from TPST Rempoah and to determine the best fungal isolates in degrading cellulose. This research was conducted at the Mycology and Phytopathology Laboratory, Faculty of Biology, Jenderal Sudirman University from March to August 2022.

This research was conducted using a qualitative survey method and a quantitative survey. Qualitative survey methods were used to obtain fungal isolates and quantitative survey methods were used to test the cellulolytic potential and ability of fungal isolates to degrade cellulose. The results of the study obtained 6 isolates of cellulolytic fungi. The fungal isolates which had the highest cellulolytic index were then continued to quantitative cellulase activity tests. From the results of the study, it was concluded that 6 isolates of cellulolytic fungi from the *Aspergillus* genus were successfully isolated from TPST Rempoah. The largest cellulase activity was obtained by *Aspergillus* RB1 on day 4, which was 17.92 U/ml.

Keywords: degradation, fungi, organic waste, cellulose, cellulolytic, TPST