

ABSTRAK

Indonesia merupakan salah satu negara dengan jumlah penduduk terbanyak di dunia, sehingga mengakibatkan tingginya sampah yang dihasilkan. Pengelolaan sampah organik masih belum dilakukan dengan benar menyebabkan banyak sampah menumpuk di Tempat Pengolahan Sampah Terpadu (TPST). Biodegradasi sampah organik sangat erat kaitannya dengan kemampuan jamur dalam menghidrolisis berbagai senyawa salah satunya amilum. Tujuan dari penelitian ini yaitu mengetahui isolat jamur pendegradasi amilum yang diperoleh dari tanah TPST dan mengetahui potensi amilolitiknya. Penelitian ini telah dilakukan di Laboratorium Mikologi dan Fitopatologi Fakultas Biologi Universitas Jenderal Soedirman pada Maret hingga Juli 2022.

Sampel tanah yang diambil dari 3 titik di TPST Gunung Tugel, Kecamatan Kedungrandu, Kabupaten Banyumas. Sebanyak 12 isolat berhasil diisolasi dengan menggunakan metode pengenceran bertingkat. *Screening* dilakukan menggunakan media *Strach Agar* dan reagen iodine untuk mengetahui potensi amilolitik dari isolat hasil isolasi. Hasil *screening* menunjukkan sebanyak 5 isolat berpotensi amilolitik dengan nilai indeks enzimatis ≥ 1 , isolat tersebut teridentifikasi sebagai isolat dari genus *Aspergillus* dan *Penicillium*. Isolat dengan indeks amilolitik tertinggi selanjutnya dilakukan pengukuran kadar glukosa dengan metode DNS. Berdasarkan hasil uji tersebut didapatkan bahwa kadar glukosa tertinggi pada waktu inkubasi hari ke-6. Isolat dengan indeks amilolitik tertinggi adalah isolat TB2 dari genus *Aspergillus* dengan glukosa hasil hidrolisis sebesar 147,5 ppm.

Kata kunci: *amilolitik, hidrolisis glukosa, jamur, sampah organik, TPST*

SUMMARY

Indonesia is one of the countries with the largest population in the world, thus resulting in high waste generated. Organic waste management is still not done properly causing a lot of garbage to accumulate in the Integrated Waste Management Site. Biodegradation of organic waste is closely related to the ability of fungi to hydrolyze various compounds, one of which is starch. The purpose of this study was to determine the isolates of starch-degrading fungi obtained from the soil of the Integrated Waste Management Site and to determine their amyolytic potential. This research was carried out at the Mycology and Phytopathology Laboratory, Faculty of Biology, Jenderal Sudirman University from March to July 2022.

Soil samples were taken from 3 points in the Gunung Tugel Integrated Waste Management Site, Kedungrandu District, Banyumas Regency. A total of 12 isolates were successfully isolated using the stratified dilution method. Screening was carried out using Strach Agar media and iodine reagent to determine the amyolytic potential of isolated isolates. The results of the screening showed that as many as 5 isolates had amyolytic potential with an $IE \geq 1$, the isolates were identified as isolates from the genus *Aspergillus* and *Penicillium*. The isolates with the highest amyolytic index were then measured glucose levels using the DNS method. Based on the test results, it was found that the highest glucose level was on the 6th day of incubation. The isolate with the highest amyolytic index was the TB2 isolate from the genus *Aspergillus* with hydrolyzed glucose of 147.5 ppm.

Keywords: *amyolytic, glucose hydrolysis, fungi, organic waste, TPST*

