

**STUDI LITERATUR AKTIVITAS ENZIM SELULASE OLEH
KONSORSIUM BAKTERI DAN JAMUR SELULOLITIK JERAMI PADI
(*Oryza sativa* L.)**

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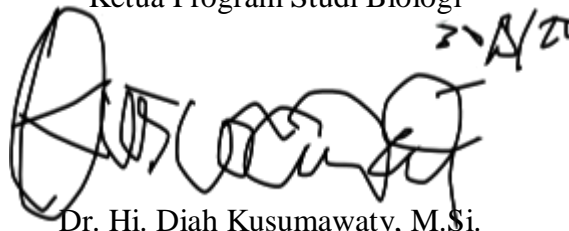


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PERNYATAAN

*Dengan ini saya menyatakan bahwa skripsi dengan judul “**STUDI LITERATUR AKTIVITAS ENZIM SELULASE OLEH KONSORSIUM BAKTERI DAN JAMUR JERAMI PADI (Oryza sativa L.)**” beserta seluruh isinya adalah benar-benar karya saya sendiri, dan saya tidak melakukan penjiplakan atau pengutipan dengan cara yang tidak sesuai dengan etika keilmuan yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung resiko atau sanksi yang dijatuhkan kepada saya apabila ditemukan adanya pelanggaran terhadap etika keilmuan dalam karya saya ini, atau ada klaim dari pihak lain terhadap keaslian karya saya ini.*

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STUDI LITERATUR AKTIVITAS ENZIM SELULASE OLEH KONSORSIUM BAKTERI JAMUR SELULOLITIK JERAMI PADI (*Oryza sativa* L.)

ABSTRAK

Enzim selulase merupakan enzim yang memiliki nilai jual yang sangat tinggi. Enzim selulase dapat dimanfaatkan dalam berbagai bidang industri. Enzim selulase banyak diminati dan dapat meningkat secara drastis. Aktivitas enzim selulase memerlukan substrat yang mengandung selulosa. Selulosa dapat diperoleh dari berbagai sumber alam, salah satunya adalah jerami padi. Jerami padi merupakan limbah pertanian. Limbah jerami padi memiliki kandungan selulosa yang tinggi mencapai 35%. Selain menjadi pakan ternak, limbah jerami padi dapat dijadikan produk yang bernilai tinggi yaitu sebagai substrat dalam aktivitas enzim selulase. Dalam proses aktivitas enzim selulase membutuhkan mikroorganisme selulolitik dalam mendegradasi substrat jerami padi seperti konsorsium bakteri dan jamur selulolitik. Konsorsium bakteri dan jamur selulolitik memiliki keunggulan yaitu memiliki kemampuan degradasi secara berurutan, meningkatkan laju degradasi substrat, memiliki kemampuan dalam menghasilkan enzim yang dibutuhkan. Hasil isolat pada konsorsium bakteri dan jamur selulolitik pada kajian ini berdasarkan studi pustaka. Tujuan penelitian studi pustaka ini adalah untuk mengetahui karakteristik konsorsium bakteri dan jamur selulolitik, serta untuk mengetahui pH dan suhu optimum yang dapat menghasilkan aktivitas enzim selulase tertinggi oleh konsorsium bakteri dan jamur selulolitik. Berdasarkan hasil studi pustaka, konsorsium bakteri *Bacillus atropheus*, *Bacillus* sp. dan jamur *Aspergillus awamori*, *Aspergillus nidulans*, *Phanerochaete chrysosporium*, *Trichoderma viridae*, *Eupenicillium crustaceum* menghasilkan enzim selulase tertinggi yaitu 350 IU/g dengan pH optimum 8,4 dan suhu optimum 27°C.

Kata Kunci: Enzim Selulase, konsorsium bakteri dan jamur selulolitik, jerami padi, aktivitas selulolitik.

**LITERATURE STUDY OF CELLULASE ENZYMES ACTIVITY BY THE
CONSORTIUM BACTERIA AND FUNGI CELLULOLYTIC OF RICE STRAW
(*Oryza sativa* L.)**

ABSTRACT

Cellulase enzymes is an enzymes that has a high selling value. Cellulase enzymes can be utilized in various fields of industry. Cellulase enzymes are in great demand and can increase drastically. Cellulase enzymes requires a substrate that contains cellulose. Cellulose can be obtained from various natural sources, one of which is rice straw. Rice straw is agriculture waste. Rice straw waste has a high cellulose content reaching 35%. In producing cellulose enzymes, cellulolytic microorganisms are needed to degrade rice straw such as a consortium of cellulolytic bacteria and fungi. A consortium of cellulolytic bacteria and fungi has the advantage of having a sequential degradation ability, increasing the rate of substrate degradation, having the ability to produce the enzymes needed. The isolate result by consortium of cellulolytic bacteria and fungi in this study based on literature studies. The purpose of this literature study is to determine the characteristics of a cellulolytic bacteria and fungi consortium, as well as to determine the optimum pH and temperature that can produce the highest cellulose enzymes of a cellulolytic bacteria and fungi by a consortium. Based on literature studies, a consortium of cellulolytic bacteria and fungi produced the highest cellulose enzymes of 350 IU/g with an optimum pH of 8,4 and an optimum temperature of 27°C.

Key Words: Cellulase enzymes, consortium bacteria and fungi cellulolytic, Rice straw, cellulolytic activity.

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