

## Pengujian kemampuan rhizopus azygosporus UICC 539 mendegradasi pati 1% dan 2% pada berbagai suhu = The ability of rhizopus azygosporus UICC 539 to degrade 1% and 2% Starch at Various Temperatures

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### Abstrak

Penelitian ini bertujuan untuk menguji kemampuan *Rhizopus azygosporus* UICC 539 dalam mendegradasi pati 1% dan 2% pada suhu 30°C, 35°C, 40°C, 45°C, dan 50° C. *Rhizopus azygosporus* UICC 539 di Potato Sucrose Agar (PSA) usia 5 hari pada suhu 30°C dibuat menjadi blok agar berdiameter 6 mm. Blok agar mengandung sel *R. azygosporus* (106 sel/mL) ditanam pada Czapek Dox Agar (CDA) modifikasi dengan penambahan pati 1% (b/v) dan 2% (b/v), kemudian diinkubasi pada suhu 30°C, 35°C, 40°C, 45°C, dan 50° C, selama 3 dan 5 hari. Kontrol adalah CDA modifikasi dengan pati 1% dan 2% tanpa blok agar serta CDA tanpa pati sebagai kontrol negatif. Hasil degradasi pati ditunjukkan sebagai zona bening dengan menambahkan larutan Lugol iodine pada medium perlakuan setelah 3 dan 5 hari. Kemampuan degradasi pati dihitung menggunakan Enzymatic Index (EI) dengan R/r, yaitu R adalah diameter zona bening dan r adalah diameter koloni. Hasil penelitian menunjukkan bahwa *R. azygosporus* UICC 539 mampu mendegradasi pati 1% dan 2% pada suhu 30°–50°C. Kemampuan *R. azygosporus* UICC 539 mendegradasi pati semakin meningkat, seiring peningkatan suhu pertumbuhan dan waktu inkubasi.

.....This study aims to test the ability of *Rhizopus azygosporus* UICC 539 to degrade 1% and 2% starch at temperatures of 30°C, 35°C, 40°C, 45°C, and 50° C. Five-day old *R. azygosporus* UICC 539 in Potato Sucrose Agar (PSA) at 30°C was made into agar blocks in 6 mm diameter. Agar blocks containing *R. azygosporus* cells (106 cells/mL) were grown on modified Czapek Dox Agar (CDA) with the addition of 1% (w/v) and 2% (w/v) starch, and incubated at 30°C, 35°C, 40°C, 45°C, and 50°C, for 3 and 5 days. Controls were modified CDA with 1% (w/v) and 2% (w/v) starch without agar blocks and CDA without starch as negative control. Indication of starch degradation was shown as a clear zone by adding Lugol's iodine solution to the medium after 3 and 5 days. The ability of *R. azygosporus* UICC 539 to degrade starch was calculated using Enzymatic Index (EI) formulation: R/r, where R was the diameter of the clear zone and r was the diameter of the colony. The results showed that *R. azygosporus* UICC 539 was able to degrade 1% and 2% starch at 30°C–50°C. The ability of *R. azygosporus* UICC 539 to degrade starch increased with increasing temperature and incubation time.