Pengujian kemampuan rhizopus azygosporus UICC 539 dalam mendegradasi skimmed milk 1% dan 2% pada berbagai suhu = Skimmed milk-degrading ability of rhizopus azygosporus UICC 539 at various temperatures.

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Abstrak

Penelitian ini bertujuan untuk menguji kemampuan R. azygosporus UICC 539 dalam mendegradasi skimmed milk 1% (b/v) dan 2% (b/v) di suhu 30, 35, 40, 45, dan 50, 55, dan 60C. Blok agar (diameter 6 mm) mengandung 106 sel/mL R. azygosporus (umur 5 hari, pada Potato Sucrose Agar, PSA, di suhu 30C) digunakan untuk pengujian. Blok agar berisi biakan ditumbuhkan pada Czapek Dox Agar (CDA) modifikasi tanpa sumber karbon yang telah ditambahkan skimmed milk 1% (b/v) dan 2% (b/v) serta Victoria Blue 20% (b/v) sebagai indikator. Medium CDA modifikasi berisi blok agar diinkubasi selama 5 hari di suhu 30, 35, 40, 45, dan 50, 55, dan 60C. Medium CDA modifikasi tanpa kapang sebagai medium kontrol. Indikasi degradasi skimmed milk oleh R. azygosporus UICC 539 ditunjukkan dengan terbentuknya zona bening di sekitar koloni. Kemampuan kapang mendegradasi skimmed milk dinyatakan dengan nilai Enzymatic Index (EI). Nilai EI dihitung menggunakan rumus R/r, yaitu R adalah diameter zona bening dan r adalah diameter koloni. Hasil menunjukkan R. azygosporus UICC 539 mendegradasi skimmed milk 1% dan 2% dengan terbentuknya zona bening. Kemampuan R. azygosporus UICC 539 mendegradasi skimmed milk dipengaruhi oleh variasi konsentrasi substrat dan suhu inkubasi, yang ditunjukkan dengan nilai Enzymatic Index (EI) yang bervariasi.

.....This study aims to test the ability of R. azygosporus UICC 539 to degrade 1% (w/v) and 2% (w/v) skimmed milk at 30, 35, 40, 45, dan 50, 55, and 60C. Agar block (6 mm diameter) containing 106 cells/mL of R. azygosporus (5 days old, on Potato Sucrose Agar, PSA at 30C) was used for the test. Fungi on the agar blocks were grown on modified Czapek Dox Agar (CDA) without a carbon source with the addition of 1% (w/v) or 2% (w/v) skimmed milk and Victoria Blue 20% (w/v) as an indicator. Modified CDA plates containing agar blocks were incubated at 30, 35, 40, 45, and 50, 55, and 60C for 3 and 5 days. Modified CDA without the fungus served as a control medium. Indication of skimmed milk degradation by R. azygosporus UICC 539 was shown by the formation of a clear zone around the colony. The ability of R. azygosporus UICC 539 to degrade skimmed milk was expressed by the Enzymatic Index (EI) value. The value was calculated using the formula: 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 degraded 1% and 2% skimmed milk by forming clear zones. Skimmed milk-degrading ability of R. azygosporus UICC 539 was influenced by variation of substrate concentrations and various incubation temperatures, resulting in differences of Enzymatic Index (EI) values.