Pengaruh pertumbuhan rhizopus azygosporus UICC 539 di suhu 30°C dan 40°C pada campuran lumpur dan bungkil sawit (3:1) steril dan analisis komposisi nutrien = Effect of rhizopus azygosporus UICC 539 growth at 30°C and 40°C on sterile slurry and palm kernel cake mixtures and nutrient composition analysis

Lakeisha Aurelia, author

Abstrak

Penelitian ini bertujuan untuk mengetahui pertumbuhan Rhizopus azygosporus UICC 539 di medium Potato Sucrose Agar (PSA) pada suhu 51°C, 52°C, 53°C, 54°C, 55°C, mengetahui kemampuan R. azygosporus UICC 539 untuk memfermentasi campuran lumpur dan bungkil sawit (3:1) steril pada suhu 30C dan 40C dengan Solid-State Fermentation (SSF), dan analisis komposisi campuran lumpur dan bungkil sawit (3:1) steril setelah pertumbuhan R. azygosporus UICC 539. Persiapan inokulum dengan menumbuhkan kapang dalam Potato Sucrose Broth (PSB) secara fermentasi pada suhu 30C dan 40C selama 5 hari. Inokulum (10%, v/v) ditambahkan ke dalam campuran lumpur sawit dan bungkil sawit (3:1) dalam cawan Petri (diameter 9 cm) pada 30C dan 40C selama 5 hari. Analisis nutrien pada fermentasi campuran lumpur dan bungkil sawit berdasarkan Standar Nasional Indonesia (SNI-01-2891-1992). Parameter yang diuji yaitu, energi total, energi dari lemak, kadar air, kadar abu, lemak total, protein, dan karbohidrat total. Hasil penelitian menunjukkan R. azygosporus UICC 539 tidak tumbuh pada PSA di suhu 51, 52, 53, 54, 55C. Strain tersebut dapat memfermentasi campuran lumpur dan bungkil sawit (3:1) steril pada suhu 30°C dan 40°C dengan SSF. Pertumbuhan R. azygosporus UICC 539 pada campuran limbah menunjukkan peningkatan kadar air dan abu, penurunan kadar protein, total kalori dan kandungan karbohidrat. Tidak ada perubahan kalori dari lemak dan kadar lemak total dibandingkan dengan kontrol.

.....This study aims to determine the growth temperature of Rhizopus azygosporus UICC 539 in Potato Sucrose Agar (PSA) at 51°C, 52°C, 53°C, 54°C, 55°C, to determine the ability of R. azygosporus UICC 539 to ferment mixture of slurry and palm kernel cake (3:1) sterile at 30°C and 40°C with Solid-State Fermentation (SSF), and analysis of the composition of a mixture of sterile slurry and palm kernel cake (3:1) after the growth of R. azygosporus UICC 539. Inoculum preparation by growing the mold in Potato Sucrose Broth (PSB) by fermentation at 30°C and 40°C for 5 days. Inocula (10%, v/v) were added to the mixture of slurry and palm kernel cake (3:1) in Petri dishes (9 cm diameter) at 30°C and 40°C for 5 days. Nutrient analysis in the mixed fermentation of slurry and palm kernel cake was carried out based on the Indonesian National Standard (SNI-01-2891-1992). The parameters tested were total energy, energy from fat, moisture content, ash content, total fat, protein, and total carbohydrates. The results showed that R. azygosporus UICC 539 did not grow on PSA at 51, 52, 53, 54, 55C. The strain could ferment a mixture of slurry and palm kernel cake (3:1) sterile at 30°C and 40°C with SSF. The growth of R. azygosporus UICC 539 in the waste mixture showed an increase in water and ash content, a decrease in protein content, total calories and carbohydrate content. There were no changes in calories from fat and total fat content compared to controls.