Penapisan kapang amilolitik dan khamir penghasil alkohol hasil isolasi dari ragi tapai asal Jawa Barat = Isolation and screening of amylolytic molds and alcohol-producing yeasts isolated from ragi tapai of West Java

Washila Nurlaila, author

Abstrak

ABSTRACT
Isolasi dan penapisan kapang dan khamir dari lima jenis ragi tapai asal beberapa kota di Jawa Barat telah dilakukan. Berdasarkan hasil isolasi, didapatkan tiga belas isolat kapang dan tujuh isolat khamir. Penapisan kapang amilolitik dilakukan secara kualitatif menggunakan uji iodin. Uji kualitatif dilakukan dengan mengukur zona bening pada medium starch agar yang telah ditumbuhi kapang dan kemudian ditetesi iodin. Hasil uji menunjukkan isolat (ZC1, ZC2, ZGJ2) memiliki diameter zona bening sebesar (69,95 mm, 58,73 mm, 56,85 mm). Aktivitas amilase ketiga isolat kapang terpilih diukur menggunakan metode DNS (Dinitrosalicylic Acid). Hasil uji menunjukkan bahwa isolat ZGJ2 merupakan isolat kapang dengan aktivitas tertinggi (6,30 U/mL) sedangkan isolat kapang dengan aktivitas terendah (3,03 U/mL) dihasilkan oleh isolat ZC2. Penapisan khamir penghasil alkohol dilakukan berdasarkan pertumbuhan sel dan gas yang terperangkap dalam tabung Durham, dalam medium PDB yang ditambah glukosa 5%, 10%, dan 15%. Ketiga isolat mampu tumbuh dengan baik pada medium dengan konsentrasi glukosa 15%. Namun pembentukan gas hanya terjadi pada penambahan 10% glukosa oleh isolat YC1 (4+) dan YC3 (3+) serta penambahan 5% glukosa oleh isolat YC2 (2+). Hasil pengamatan karakter makroskopis dan mikroskopis isolat ZC1 dan ZGJ2 diduga merupakan genus Rhizopus, sedangkan isolat ZC2 masuk ke dalam genus Mucor. Isolat khamir terpilih diduga termasuk ke dalam filum Ascomycota berdasarkan karakter morfologi dan fisiologi.
<hr>
ABSTRACT
Isolation and screening of molds and yeasts from five types of ragi tapai from several cities in West Java had been done. Based on the results of isolation, thirteen mold isolates and seven yeast isolates were obtained. Screening of amylolytic mold was done by qualitative assay using iodine. Iodine assay was done by measuring clear zones on starch agar medium which had been grown with mold and then flooded with iodine. The results of iodine assay showed that three isolates (ZC1, ZC2, ZGJ3) formed clear zones diameter (69.95, 58.73, 56.85). Amylase activity of the three selected mold isolates were measured using the DNS (Dinitrosalicylic Acid) method. The results showed that ZGJ2 had highest activity (6.30 U / mL) meanwhile the mold isolate with the lowest activity (3.03 U / mL) was ZC2. Alcohol-producing yeasts were screened based on cell growth and trapped in Durham tubes, in the medium of PDB added with glucose 5%, 10%, and 15%. The best three isolates were able to grow in a medium with 15% glucose concentration. However the formation of only occurs in the addition of 10% glucose by YC1 (4+) and YC3 (3+) and the addition of 5% glucose by YC2 (2+). Based on observation of the macroscopic and microscopic characters, ZC1 and ZGJ2 assumed belong to the Rhizopus genus, meanwhile ZC2 belongs to the Mucor genus.The selected yeasts are assumed to belong to the Ascomycota phylum based on morphological and physiological

characters.