



Intisari

Biji kakao merupakan bahan baku utama pada industri coklat. Biji kakao harus melalui proses fermentasi untuk mendapatkan rasa khas kakao. Proses fermentasi biji kakao merupakan proses yang terjadi secara spontan. Fermentasi ini terjadi karena adanya kontaminasi dari lingkungan, tangan pekerja dan peralatan fermentasi. Komposisi mikroba yang terdapat pada fermentasi spontan menyebabkan kualitas fermentasi menjadi tidak konsisten. Penelitian ini bertujuan untuk mendapatkan isolat khamir yang berperan dalam proses fermentasi kakao. Isolat khamir ini diharapkan dapat dimanfaatkan dalam pengembangan inokulum fermentasi kakao. Sumber isolat khamir merupakan biji dan *pulp* kakao yang sedang mengalami proses fermentasi pada fase 24 jam. Cuplikan biji dan *pulp* didapatkan dari kelompok tani Hargo Mulyo, dusun Karang Sari, desa Nglanggeran, kecamatan Patuk, kabupaten Gunungkidul. Khamir diisolasi menggunakan medium *Malt Extract* dengan penambahan Streptomycin 100 mg/L. Hasil isolasi diperoleh 26 isolat khamir. Seleksi keragaman isolat khamir dilakukan menggunakan *Microsatellite-Primed* PCR (MSP-PCR) *Fingerprinting* dan diperoleh 18 isolat khamir. Isolat yang didapat dihitung keragamannya menggunakan indeks keragaman Shannon, dan diketahui bahwa isolat khamir yang diperoleh tersebut memiliki keragaman sedang. Berdasarkan analisis urutan basa 26S rDNA diperoleh 4 spesies khamir yaitu: *Candida parapsilosis*, *Debaryomyces prosopidis*, *Issatchenkia orientalis* dan *Pichia manshurica*,

Kata kunci: Fermentasi Kakao, Khamir MSP-PCR *fingerprinting*, Identifikasi 26S rDNA.



Abstract

Cacao beans are the main raw material in the chocolate industry. Cocoa beans have to go through the fermentation process, to get a cocoa flavor. Cocoa beans fermentation process occurs spontaneously. This fermentation occurs due to contamination from the environment, hands of workers and the equipment. Microbial composition in the spontaneous fermentation causes quality of the fermentation becomes inconsistent. This study aims to get yeast isolates that play a role in process of cacao fermentation. Yeast isolates are expected to be utilized for the development of fermentation inoculum that can guarantee the quality of fermented cacao. Source of yeast isolates is the cocoa beans and pulp that is in a phase of fermentation at 24 hours. Beans were taken from farmer groups Hargo Mulyo, Karang Sari hamlet, village Nglanggeran, Patuk sub-district, Gunungkidul district. Yeasts were isolated using medium Malt Extract agar supplemented by streptomycin 100 mg/L. Amount of 26 yeast isolates obtained from the cacao beans samples. Differentiation of yeast isolates was performed using Microsatellite-primed PCR (MSP-PCR) fingerprinting and obtained 18 isolate of yeast. Diversity of obtained isolates were calculated by shannon index and the result showed that isolate yeast belong to moderate diversity. Based of 26S rDNA the 10 isolates were identified as: *Candida parapsilosis*, *Debaryomyces prosopidis*, *Pichia kudriavzevii* and *Pichia manshurica*.

Keywords: Cacao fermentation, Yeast, MSP-PCR fingerprinting, Identification of 26S rDNA.