

**KUALITAS FISIK DAN KIMIA PRODUK KOPI FERMENTASI
DENGAN PENAMBAHAN ISOLAT YEAST *Saccharomyces cerevisiae* DAN
*Pichia kudriavzevii***

INTISARI

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Fermentasi merupakan tahapan penting dalam pengolahan kopi. Proses fermentasi memiliki efek langsung pada kualitas kopi. Mayoritas masyarakat Indonesia masih melakukan fermentasi tradisional yang hanya mengandalkan mikroba alami pada buah kopi segar. Penelitian ini bertujuan untuk mengevaluasi kualitas fisik dan kimia hasil kopi fermentasi dengan penambahan isolat yeast *S. cerevisiae* dan *P. kudriavzevii*. Bahan yang digunakan pada penelitian ini adalah buah kopi *cherry* dari Kebun Kopi Ngipiksari, Yogyakarta. Parameter yang diamati dalam penelitian ini meliputi suhu, kadar air, warna, dimensi, *bulk density*, *particle density*, derajat keasaman, brix, kandungan kafein, serta senyawa volatil. Perlakuan metode fermentasi yang digunakan adalah fermentasi aerob, anaerob, anaerob dengan *S. cerevisiae* dan anaerob dengan *P. kudriavzevii*. Sifat fisik dan kimia *fermented bean* dan *roasted bean* hasil fermentasi kemudian dibandingkan dengan perlakuan tanpa fermentasi. Hasil dari penelitian ini menunjukkan bahwa kualitas produk kopi sangrai dengan perlakuan tanpa fermentasi, fermentasi metode aerob, anaerob, anaerob *S. cerevisiae*, dan anaerob *P. kudriavzevii* secara berurutan adalah kadar air 2,798-3,013%, *Geometric mean diameter* (GMD) 8,067mm, 8,159mm, 8,386mm, 8,685mm, 8,925mm., *bulk density* 0,473 - 0,528 g/cm³, *particle density* 0,84 – 0,91 g/cm³, *lightness* 21,87, 16,69-20,40., derajat keasaman (pH) 5,31, 5,16, 5, 5,01, 5,05., dan kadar kafein 2,72%, 1,88% 2,07%, 2,57, dan 3,69%. Kopi tanpa fermentasi dan fermentasi anaerob *S. cerevisiae* memiliki 29 jenis senyawa volatil, sedangkan kopi fermentasi anaerob *P. kudriavzevii* memiliki 22 jenis senyawa volatil. Hasil penelitian ini menunjukkan bahwa penambahan isolat yeast selama fermentasi mempengaruhi karakteristik kopi yang dihasilkan, seperti pH, kadar kafein dan senyawa volatil. Setiap jenis yeast akan menghasilkan senyawa volatil yang spesifik pada kopi sangrai.

Kata kunci: fermentasi, kopi robusta, *S. cerevisiae*, *P. kudriavzevii*, kualitas fisik dan kimia

**PHYSICAL AND CHEMICAL QUALITY OF FERMENTED COFFEE
WITH ADDITION OF YEAST ISOLATES *Saccharomyces cerevisiae* AND
*Pichia kudriavzevii***

ABSTRACT

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Fermentation is an important stage in coffee processing that has a direct effect on the quality of the coffee. Many Indonesian people still do traditional fermentation which only relies on natural microbes in fresh coffee cherries so that the quality is inconsistent.. This study aims to evaluate the physical and chemical quality of fermented coffee with the addition of yeast isolates *S. cerevisiae* and *P. kudriavzevii*. The material used in this study was coffee cherries from Ngipiksari Coffee Plantation, Yogyakarta. Parameters observed in this study include temperature, moisture content, color, dimensions, bulk density, particle density, acidity level (pH), brix, caffeine content, and volatile compounds. The fermentation methods used were aerobic, anaerobic, anaerobic fermentation with *S. cerevisiae* and anaerobic with *P. kudriavzevii*. The physical and chemical properties of fermented fermented beans and roasted beans were then compared with the treatment without fermentation. The results of this study indicate that the quality of roasted coffee products with treatments without fermentation, aerobic, anaerobic, anaerobic *S. cerevisiae*, and anaerobic *P. kudriavzevii* treatments, respectively, is water content 2.798-3.013%, Geometric mean diameter (GMD) 8.067mm , 8.159mm, 8.386mm, 8.685mm, 8.925mm., bulk density 0.473 - 0.528 g/cm³, particle density 0.84 – 0.91 g/cm³, lightness 21.87, 16.69-20.40., degree of acidity (pH) 5.31, 5.16, 5, 5.01, 5.05., and caffeine content 2.72%, 1.88% 2.07%, 2.57, and 3.69 %. The non-fermented and anaerobically fermented coffee *S. cerevisiae* had 29 types of volatile compounds, while the anaerobic fermented coffee *P. kudriavzevii* had 22 types of volatile compounds. The results of this study indicated that the addition of yeast isolate during fermentation affected the characteristics of the coffee produced, such as pH, caffeine content and volatile compounds. Each type of yeast will produce specific volatile compounds in roasted coffee.

Keywords: fermentation, robusta coffee, *S. cerevisiae*, *P. kudriavzevii*, physical and chemical quality