

Perlakuan Fermentasi Pada Proses Pengolahan Kering dan Semi Kering Kopi Arabika (*Coffea arabica*) Gayo Varietas Ateng Super Terhadap Profil Senyawa Volatil, Non Volatil, dan Karakteristik Sensoris

INTISARI

Proses pengolahan kering (*dry*) dan semi kering (*pulp natural & black honey*) merupakan metode pengolahan pascapanen pada kopi arabika yang dilakukan tanpa adanya proses fermentasi. Proses *dry* (D), *pulp natural* (PN), dan *black honey* (BH) telah dilaporkan dapat menghasilkan kualitas yang rendah dengan munculnya flavor *medicinal*, *earthy*, *musty*, *sour*, dan *bitter* sehingga menurunkan nilai uji sensoris. Kualitas yang rendah tersebut dapat disebabkan kondisi kelembaban dan curah hujan tinggi dengan intensitas cahaya matahari yang rendah sebagaimana di Gayo. Perlakuan fermentasi yang diterapkan pada proses kering dan semi kering sebelum pengeringan dilaporkan dapat memperbaiki kualitas sensoris. Penelitian ini bertujuan untuk menganalisis pengaruh fermentasi anaerob secara spontan pada kopi arabika Gayo proses kering dan semi kering. Hasil penelitian menunjukkan fermentasi berpengaruh terhadap peningkatan sukrosa mencapai 23,08% w/w pada PN-24 dan 21,35% w/w pada BH-48. Asam sitrat dan asam malat merupakan asam yang berkontribusi positif terhadap flavor yang mendominasi *green bean*. Asam organik (laktat, asetat, propionat) pada *roasted bean* meningkat sebagai hasil degradasi karbohidrat yang memberikan rasa getir dan *sour*. Senyawa trigonelline dan asam klorogenat terdegradasi selama penyangraian namun senyawa kafein cenderung stabil. Hasil analisis sensoris menunjukkan peningkatan skor yang signifikan pada proses PN-24 dan PN-48 dengan karakteristik aroma *nutty*, *fruity* (*pineapple*, *sweet orange*), *floral*, dan *caramellic* tanpa ditemukan karakter aroma negatif. Analisis senyawa volatil menggunakan SPME-GCMS menunjukkan perlakuan proses semi kering yang difermentasi selama 48 jam (BH-48) dapat menghasilkan senyawa β -Damascenone dengan nilai OAV tertinggi mencapai 11.506 dengan karakteristik aroma *honey-like*, *fruity*, *apple*, dan *rose*. Fermentasi pada proses kering selama 48 jam (D-48) dicirikan dengan senyawa *Coffee furanone* yang memiliki aroma *bready* dan *sweet*. Tidak ditemukan aroma yang negatif dari semua perlakuan. Proses semi kering (PN) merupakan proses yang sesuai untuk dilangsungkannya proses fermentasi.

Kata kunci : *coffea arabica*, pascapanen kopi, fermentasi kopi, flavor kopi, uji citarasa.

**Fermentation Treatment In The Dry and Semi-Dry Process of Gayo Arabika
Coffee (*Coffea Arabica*) of Ateng Super Variety on Profile of Volatile
Compounds, Non-Volatile, and Sensorial Properties**

ABSTRACT

The dry process (dry) and semi-dry (pulp natural & black honey) were postharvest processing method of Arabica coffee that was carried out without any fermentation process. Dry (D), pulp natural (PN), and black honey (BH) processes have been reported producing low-quality flavors such as medicinal, earthy, musty, sour, and bitter flavors that reducing the value of sensory score. The low quality could be caused by humid condition and high rainfall with low sunlight intensity, especially in Gayo. The fermentation treatment was applied to the dry and semi-dry process before drying and reported could improve sensory quality. This study aims to analyze the effect of spontaneous anaerobic fermentation on Gayo Arabica coffee in a dry and semi-dry process. The results showed that fermentation affected the sucrose amount reaching 23.08% w / w on PN-24 and 21.35% w / w on BH-48. Citric acid and malic acid were organic acids that contribute positively to the flavor that dominates the green bean. Organic acids (lactate, acetate, propionate) in roasted beans increased as a result of carbohydrate degradation which gives a sour taste. Trigonelline compound and chlorogenic acid were degraded during roasting but caffeine compound tends to be stable. The results of the sensory analysis showed a significant increased in cupping scores on the PN-24 and PN-48 processes with the characteristics of nutty, fruity (pineapple, sweet orange), floral, and caramelly without negative aroma. Analysis of volatile compounds using SPME-GCMS showed the treatment of semi-dry (BH-48) process by fermented for 48 hours could produce β -Damascenone compounds with the highest OAV values reaching 11,506 with honey-like, fruity, apple, and rose aroma characteristics. Fermentation in the dry process for 48 hours (D-48) was characterized by the compound coffee furanone which has a breadly and sweet aroma. There was no negative aroma was found in all the treatments. The semi-dry process (PN) was suitable for fermentation before drying.

Keywords : coffea arabica, coffee processing, coffee fermentation, coffee flavor, cupping test.