PROFIL MIKROBIOLOGIS DAN PERUBAHAN KOMPONEN KIMIA SELAMA FERMENTASI *WINE COFFEE* ROBUSTA (*Coffea canephora*) DENGAN PENAMBAHAN INOKULUM CAMPURAN

INTISARI

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Kopi merupakan salah satu minuman yang paling populer di dunia. Fermentasi *Wine coffee* merupakan salah satu cara pemrosesan kopi yang dapat menghasilkan flavor khas seperti wine. Cita rasa *wine coffee* yang unik tersebut dihasilkan melalui perombakan senyawa dan produksi metabolit akibat metabolisme mikroorganisme. Penambahan inokulum pada fermentasi kopi telah dilaporkan memiliki dampak yang menguntungkan terhadap hasil akhir yang didapatkan. Penambahan inokulum dapat mengontrol dominasi mikroba tertentu yang menguntungkan. Hasilnya tercipta fermentasi yang lebih terkontrol dan memperoleh flavor yang diinginkan. Penelitian ini bertujuan untuk mengetahui profil mikrobia dan perubahan komponen kimia pada *green bean* yang dihasilkan selama proses fermentasi *wine coffee* dengan penambahan inokulum. Pada penelitian ini buah kopi robusta difermentasi selama 30 hari dengan penambahan inokulum campuran kultur *Wickerhamomyces anomalus* WBY3 dan *Enterococcus faecium* KB5 kemudian dilakukan analisis mikrobiologi dan perubahan kimianya. Hasil yang didapatkan menunjukkan populasi total bakteri, bakteri asam laktat, dan total khamir cenderung mengalami penurunan. Selain itu, terjadi peningkatan gula reduksi, senyawa fenolik, dan asam klorogenat yang terjadi secara signifikan. Kadar kafein dan nilai pH menunjukkan penurunan secara signifikan selama fermentasi. Penelitian ini menunjukkan pengaruh yang signifikan antara lama waktu fermentasi dan perubahan komponen kimia biji kopi selama proses fermentasi *wine coffee* dengan menggunakan inokulum campuran *Wickerhamomyces anomalus* WBY3 dan *Enterococcus faecium* KB5 selama 30 hari fermentasi.

Kata kunci: *wine coffee*, fermentasi kopi, inokulum campuran, fermentasi dengan inokulasi, *Wickerhamomyces anomalus*, *Enterococcus faecium*

MICROBIAL PROFILE AND CHEMICAL COMPONENT CHANGES DURING FERMENTATION OF ROBUSTA WINE COFFEE (*Coffea canephora*) WITH THE ADDITION OF A MIXED INOCULUM

ABSTRACT

Coffee is one of the most popular beverages in the world. Coffee wine fermentation is one of the coffee processing methods that can produce a distinctive wine-like flavour. The unique flavour of coffee wine is produced through the breakdown of compounds and the production of metabolites due to the metabolism of microorganisms. The addition of inoculum to coffee fermentation has been reported to have a favourable impact on the result. The addition of an inoculum can control the dominance of certain beneficial microbes. This results in a more controlled fermentation and the desired flavour. This study aims to determine the microbiological profile and changes in the chemical components of green beans produced during the fermentation process of wine coffee with the addition of inoculum. In this study, robusta coffee fruit was fermented for 30 days with the addition of a mixed inoculum culture of *Wickerhamomyces anomalus* WBY3 and *Enterococcus faecium* KB5 then microbiological analysis and chemical changes were carried out. The results showed that the total population of bacteria, lactic acid bacteria, and total yeast tended to decrease. In addition, there was a significant increase in reducing sugars, phenolic compounds, and chlorogenic acid. Caffeine content and pH value showed a significant decrease during fermentation. This study showed a significant effect between the length of fermentation time and changes in the chemical components of coffee beans during the wine coffee fermentation process using a mixed inoculum of *Wickerhamomyces anomalus* WBY3 and *Enterococcus feacium* KB5 for 30 days of fermentation.

Keywords: wine coffee, coffee fermentation, mixed inoculum, fermentation by inoculation, *Wickerhamomyces anomalus*, *Enterococcus faecium*