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Analysis of Total Acid in Arabica Coffee Beans after Fermentation with Ohmic Technology

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Abstract : Coffee is widely consumed not only because of its typical taste, but coffee has antioxidant properties because of its polyphenols, and it stimulates brain's performance. The main problem with the consumption of coffee is its content of caffeine. Caffeine, when consumed in excess, can increase muscle tension, stimulate the heart, and increase the secretion of gastric acid. In this research, we applied ohmic-based fermentation technology, which is specially designed to mimic the stomach. We used Arabica coffee, which although cheaper than Luwak coffee, has high acidity, which needs to be reduced. Hence, we applied the ohmic technology, varied the time and temperature of the process and measured the total acidity of the coffee to determine optimum fermentation conditions. Results revealed total acidity of the coffee varied with fermentation conditions; 0.32% at 400C and 12 hr, and 0.52% at 400C and 6 hr. The longer the fermentation, the lower was the acidity. The acidity of the mongoose-fermented (natural fermentation) beans was 2.34%, which is substantially higher than the acidity of the ohmic samples. Ohmic-based fermentation technology, therefore, offers improvements in coffee quality, and this is discussed to highlight the potential of ohmic technology in coffee processing.

Keywords : ohmic technology, fermentation, coffee quality, Arabica coffee
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