



Luwak-Style Processing for Robusta coffee

Introduction:

Coffee is the most consumed beverage and second most traded product in the world. Due to its distinct properties, such as bitterness, caffeine level, aroma and flavour, coffee has played important roles in our society throughout history. Currently, the two most cultivated species of coffee beans worldwide are Arabica coffee and Robusta coffee. About 70% of the global coffee production is Arabica and it is considered the most suitable coffee for drinking due to its taste. In contrast, Robusta is more bitter and less tasty in nature, but it has lower susceptibility to disease and has a wider growth environment than Arabica. For these reasons, Robusta has a lower cost in production. At the moment, no successful system is widely available for improving the taste and reducing the bitterness of Robusta.

Description:

Famous for its rarity and highly pleasing overall taste, Kopi Luwak coffee is produced uniquely from processing through the digestive system of palm civets native to Indonesia. An inspired processing method from Kopi Luwak have been developed to improve the taste, reduce the bitterness and release the aroma in Robusta coffee beans. It is designed for the chemical alteration of Robusta immediately after ripened beans are harvested. This Luwak-style processing combines a wet fermenting strategy and digestive mixtures similar to that of a civet's stomach to create a natural fermenting environment. In addition, it encompasses chemical, biological and mechanical components to produce similar effects occurring in civet's digestive environment. This novel technique may have the potential to increase the production and consumption of Robusta worldwide and could be extended for other food products.

Benefits:

This processing uses the advantages of the wet fermenting technique, which is known to produce better flavour and quality. It is also natural, non-toxic and safe to use on coffee beans and can reduce the native bitterness and improve the overall taste in Robusta, potentially exceeding that of Arabica with the addition of the unique Kopi Luwak style of processing. Furthermore, the internal and external pH, temperature and concentrations could be changed and fine-tuned to create the appropriate environment for generating a spectrum of desired coffee flavours. This process can easily implemented into the coffee industry and it does not interfere with other coffee developmental processes.

Development:

Previous research has shown that a lower protein content in coffee beans from the enzymatic breakdown improved the taste and reduced bitterness. The composition of the civet's endogenous digestive secretions was identified through series of protein analysis. Specifically the key proteolytic enzymes and acids involved in the penetration and chemical breakdown of intracellular proteins in Kopi Luwak were discovered. Other aspects of the civet's digestive system are extensively studied, including its predominant microflora and tract motion. These additional aspects of the civet's digestive tract will be implemented into the method and will tested to ensure its effectiveness.

Commercial Status:

Currently, patent applications are pending. Additional licensees to further develop and commercialize this technology are requested and other biochemical industries are needed to collaborate on further adjustment. We are interested in commercializing this technology with an experienced company in the coffee industry.

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