

Introduction of Technology on Verification of Oolong Tea's Product Origin

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The main Taiwanese high-mountain oolong teas are made from the varieties of Taiwan No.12 (Jinxuan, or Golden Daylily) and Green-Tip Oolong. On the other hand, there are similar varieties, machines, and tea-manufacturing technology of Taiwanese oolong tea that are very popular across Southeast Asian countries, such as Vietnam, Indonesia, Thailand, and China. The overseas varieties and oolong teas are not easy to distinguish from the original Taiwanese high-mountain oolong tea. However, the technology to analyze the tea-leaf elements and contents can be used to verify the origins of tea production because of the different tea-tree soil minerals.

Among the current known 118 elements, there are 88 natural elements available in the air, soil, and sea. However, the asymmetric distributions of these natural elements around the world can produce different tea trees and tea leaves. Thus, the elements in the tea leaves are represented by their local environments.

The Tea Research and Extension Station of COA already collected more than 500 elements to do the multiple element analysis to distinguish the major competitive Taiwanese oolong tea origins, including Vietnam, Indonesia, Thailand, and China. Then, the analytic data is analyzed in a stepwise process for a series of judgmental parameters in order to setup the five equations for the different tea origins.

More than 500 sample data have been analyzed using the technological equipment to study the tea origins and it can already examine 201 tea samples with a 88.1% accuracy. Although the accuracy is not in the level of 90%, it still achieves a significant level of creditability. Moreover, if this technology is used to distinguish Taiwan's local oolong tea versus those that came from overseas, the accurate rate can be further raised to 93%, which is quite useful to provide critical information.

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