

Studies on Volatile Compounds in a Series of Roasted Coffee Beans. Changes of the Amounts of Volatile Compounds and Total Sulfur

Y. KAWAKAMI, S. KUNIEDA, A. SATO, Y. TAKASHIMA, T. KANISAWA

Central Research Laboratory, Takasago International Corporation

SUMMARY

The changes of volatile compounds in a series of nine roast steps (L-value: 38 to 16) of coffee beans were investigated using five varieties of Arabica and Robusta coffee beans. The semi-quantitative GC data were made by water brew solvent extraction method. The total amount of volatile compounds reached to maximum (ca. 2500 ppm) at L-value 20 to 18 (French to Italian roast) and, depending upon the kinds of coffee beans, some characteristic differences in volatile compounds were found. For example, the big differences were observed in the amounts of acids and furanaldehydes between Arabica and Robusta. In Arabica coffees, it was recognised that the correlation of the amounts of furanaldehydes and pyrroles in high roast showed the characters of coffee beans (i.e. Mocha, Colombia, Brazil etc.). And this result agreed with that of PCA of sensory evaluations.

For the first time the changes of the total amounts of sulphur were studied in roasted coffees by ICP-AES. The results indicated that total sulphur amounts increased in strong roast and were larger in Robusta compared with Arabica, and its difference was getting larger in strong roast.