

Stability Improvement of Roasted and Ground Coffee by Oxygen Absorbent

T. MATSUSHIMA, N. OGURO, S. ICHIYANAGI

Central Research Laboratories, Ajinomoto General Foods, Inc., Mie, Japan

SUMMARY

The void volume in a package of R&G is the source of the oxygen which promotes product degradation. In the most common package types for vacuum packed R&G coffee, rigid steel cans and multilayer flexible bags, the can tends to have a larger void volume than the bag and also, due to the mechanical differences of the two packing systems and the desire to minimise the risk of cans denting or imploding, the initial vacuum level in cans tends to be made lower than the values applied to bags. This generally results in poorer storage stability for canned products than bagged ones.

An effective method for removing the residual oxygen present in the void space of vacuum canned coffee using an oxygen absorbent was examined to improve storage stability. Four kind of oxygen absorbents which can absorb oxygen only or can absorb both oxygen and carbon dioxide and also had a different level of oxygen absorption capacity were selected and a storage test with samples containing one of packet of these absorbents were conducted.

An improvement in the storage stability of vacuum canned R&G coffee was demonstrated by the application of oxygen absorbents. Key factors which should be considered when oxygen absorbents are applied to R&G coffee packing are absorption capacity for oxygen and function for absorbing carbon dioxide. An oxygen absorbent which has proper absorption capacity against initial oxygen volume in a package can absorb oxygen without generating a chemical flavour note. The absorption of carbon dioxide is essential to keep absorption speed of oxygen high enough to eliminate the oxidation of coffee aroma compounds.