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Changes in Volatile Compounds of Mineral Added Food during Storage

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Summary

Volatile compounds of loin ham samples were measured to investigate how nitrite influenced on the flavor profile during storage (0 - 14 days). Loin pork meats were cured by using a solution of sodium chloride, sucrose, sodium polyphosphate and sodium nitrite (hereafter referred to as cured sample), then rolled with strings, boiled at 75ºC for 30 minutes after the center of the meat reached at 63ºC, and then cooled down. Non-cured samples were prepared as the same procedure without sodium nitrite. In addition, purchased products with sodium nitrite (Jamón Serrano) and without one (Procsiutto di Parma) were also analyzed after stored for 7, 30, 60 and 90 days.

Thiobarbituric acid values of the cured samples were suppressed during storage, and those of non-cured samples increased during storage. This indicated that sodium nitrite played as an antioxidant compound during storage. Volatile compounds of samples were extracted by solvent assisted flavor assisted method, less affecting of high temperature heating. Pentanal and hexanal, which were considered to be derived from the oxidation-reaction of fat, increased during storage in the non-cured samples. Antioxidant effect of nitrite was also observed in purchased samples, since thiobarbituric acid values of Jamón Serrano were less during storage than those of Procsiutto di Parma. Hexanal, butanoic acid and hexanoic acid increased after 90 day-storage in Procsiutto di Parma. The sodium nitrite was concluded as an important ingredient for anti-oxidation in cured products.