

No. 0656

Role of Sea Salt in the Formation of Zn Protoporphyrin IX (ZPP) in Dry-Cured Meat Products without the Addition of Nitrate or Nitrite

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Summary

Parma ham is processed only from pork leg and sea salt. Zinc protoporphyrin IX (ZPP) is a characteristic red pigment in meat products that are processed without the addition of a curing agent such as nitrate or nitrite. To examine effects of impurities such as mineral components in sea salt on the formation of ZPP, we manufactured Parma ham-type dry-cured ham cured with refined salt or sea salt and examined the involvement of oxidation-reduction potential (ORP) in the formation of ZPP. The content of ZPP was increased drastically after 40 weeks. In microscopic observation, strong fluorescence caused by ZPP was observed mainly in muscle fiber after 40 weeks. On the other hand, heme contents varied considerably during processing. ORP tended to rise during processing. However, there were no obvious difference between ham cured with refined salt and that cured with sea salt. In dry-cured ham cured with no addition of a curing agent, sea salt is likely to be involved in the specific flavor but is not involved in the formation of ZPP.