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QUALITY EVALUATION AND PREFERENCES OF DRY-CURED HAM IN JAPAN

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I. INTRODUCTION

Dry-cured ham, with its unique taste, flavor, and texture, holds a distinct presence in Japanese food culture [1]. In the 1980s, Japan established laws regulating the production and sale of dry-cured ham, including standards for water activity. Consequently, a unique method of producing Japanese dry-cured ham, distinctly different from foreign varieties such as Jamón Serrano, was developed in Japan [2]. Therefore, it is anticipated that the preferences and consumption trends for dry-cured ham in Japan will differ from those in other countries. However, the systematic research conducted on this topic to date remains inadequate. The purpose of this study was to clarify the quality of dry-cured ham and consumer preferences in Japan. In this study, we conducted a sensory evaluation of dry-cured ham produced in Japan, the United States, and Spain and analyzed the quality and consumer preferences. In addition, we also investigated the qualities that consumers consider important when choosing dry-cured ham. Through this research, we aimed to clarify the current state of the dry-cured ham market in Japan and to use the results to help formulate marketing strategies within the Japanese food industry.

II. MATERIALS AND METHODS

The selected samples were representative of dry-cured hams available in Japanese supermarkets, including varieties from Japan, the United States, and Spain. The water activity of the samples was measured at 25°C using the AQUALAB 4TE water activity meter (METER Group Inc., USA). A panel of 50 members, aged from their 20s to 60s, participated in the sensory evaluation involving seven different types of commercially available dry-cured ham. The panel members completed a Check-All-That-Apply (CATA) questionnaire, utilizing a predetermined set of 16 terms in Japanese to describe the sensory attributes of each ham sample. In addition to the CATA questionnaire, the panelists rated their overall preference for each sample on a seven-point hedonic scale of liking. CATA data collected from the panelists were subjected to correspondence analysis, a statistical method used to explore the relationships between sensory attributes and samples. Furthermore, the preference scores provided by the evaluators were analyzed using cluster analysis. All data were collected and analyzed using Fizz software (version 2.70, Biosystèmes, France).

III. RESULTS AND DISCUSSION

The water activity of the tested products was 0.93±0.1. This value complied with the Japanese requirements for water activity in dry-cured meats. The results of correspondence analysis for CATA data are presented in Figure 1. The analysis revealed three distinct groups, which were classified as Japanese, Spanish, and American products, respectively. This suggests that the characteristics of dry-cured hams vary by country of production. Spanish dry-cured hams were characterized by attributes such as aged flavor, *koku*, and hardness, whereas Japanese dry-cured hams were distinguished by softness, moist texture, and sweetness. Furthermore, the cluster analysis of preference scores resulted in four major groups. These groups were classified as follows: 1) a group that preferred the Spanish dry-cured ham, 2) a group that did not prefer Spanish dry-cured ham, 3) a group that preferred American dry-cured ham, and 4) a group that preferred a specific type of Japanese dry-cured ham. It was observed that although Spanish dry-cured hams are favored in the Japanese market, there is also a distinct preference for uniquely produced Japanese dry-cured ham. The observed clustering in the preference data highlights the diverse taste preferences among Japanese consumers. The preference for Spanish dry-cured ham by one group of evaluators underscores the international appeal of these products, likely because of their distinctive aged flavor and *koku* profiles that align with global standards of high-quality dry-cured ham. However, the preference for the specific Japanese dry-cured ham by another group suggests that there is a significant market for domestically produced hams that cater to local tastes.

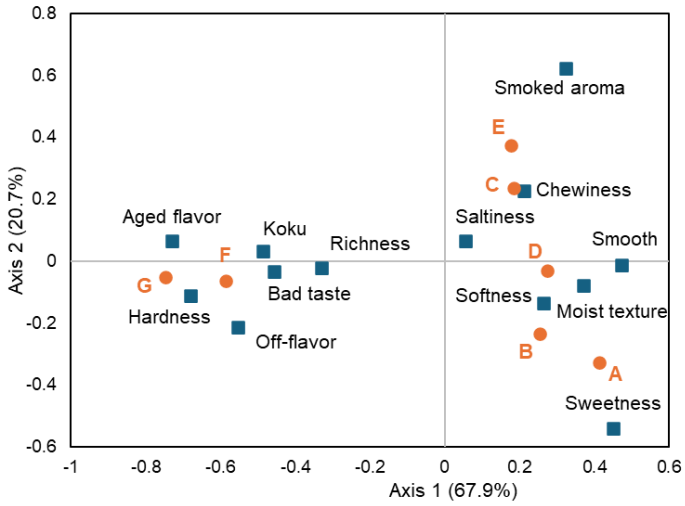


Figure 1. Correspondence analysis for CATA on dry-cured ham.

IV. CONCLUSION

This study provides an analysis of consumer preferences for dry-cured ham in Japan, highlighting both the sensory attributes and the qualities that influence consumer choices. The correspondence analysis for CATA revealed that the sensory characteristics of Japanese dry-cured ham differ from those of dry-cured ham from other countries. Spanish dry-cured hams were noted for their aged flavor, *koku*, and hardness, whereas Japanese dry-cured hams were distinguished by their softness, moist texture, and sweetness. This differentiation highlights the unique production methods and culinary traditions that shape the distinct characteristics of dry-cured ham from various regions. Moreover, cluster analysis of preference scores identified four distinct consumer groups, each with specific preferences for dry-cured ham originating from Spain, the United States, or Japan. This segmentation indicates a market landscape where, although international products like Spanish dry-cured hams enjoy popularity, there is also a strong preference for uniquely produced Japanese hams that cater to local tastes. In particular, the preference for some Japanese dry-cured hams, produced using unique methods that enhance softness and moist texture, suggests a significant market opportunity for domestic producers to leverage traditional techniques and cater to the specific sensory expectations of Japanese consumers. Future research should expand on this study by exploring the cultural and psychological factors that influence consumer preferences for dry-cured ham in Japan. Overall, this study lays the groundwork for a deeper understanding of the dry-cured ham market in Japan and provides a foundation for strategic decision-making aimed at enhancing consumer satisfaction and delivering market growth.

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