Facts
National Pork Board
PORK QUALITY
American Meat Science Association

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Current Issues for Country Cured Hams

Introduction

Country-Cured hams are a small, yet significant part of the pork industry. In fact, Country-Cured hams, and their related products, can easily be classified as one of the original value-added products. In an industry where most products are considered value-added due to the improved yields related to weight gain from added water bound by non-meat ingredients, country-cured hams and other dry-cured products are differentiated on their unique process to remove moisture from the product.

The production of Country-cured hams has long been a concentrated industry, based on the artful processing by a relatively small number of firms. The passage of the Pathogen Reduction Act in 1996 by USDA, dictated that Country-cured ham processors begin to evaluate their processes on a more scientific basis. This response by the industry has led to a greater understanding of this unique process by all involved and has opened the door for further educational opportunities necessary to develop the documentation and validation of the safety of the Country-cured ham process.

The United States Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS) standard of identity (Sec. 319.106) classifies ``Country Ham,'' ``Country Style Ham,'' ``Dry Cured Ham,'' ``Country Pork Shoulder,'' ``Country Style Pork Shoulder,'' and ``Dry Cured Pork Shoulder.'' as follows:

(a) ``Country Ham,'' ``Country Style Ham,'' or ``Dry Cured Ham,'' and ``Country Pork Shoulder,'' ``Country Style Pork Shoulder,'' or ``Dry Cured Pork Shoulder.'' are the uncooked, cured, dried, smoked or unsmoked meat food products made respectively from a single piece of meat conforming to the definition of ``ham,'' as specified in Sec. 317.8(b)(13), or from a single piece of meat from a pork shoulder. They are prepared in accordance with paragraph (c) of this section by the dry application of salt (NaCl), or by the dry application of salt (NaCl) and one or more of the optional ingredients as specified in paragraph (d) of this section. They may not be injected with curing solutions nor placed in curing solutions.

(b) The product must be treated for the destruction of possible live trichinae in accordance with such methods as may be approved by the Administrator upon request in specific instances and none of the provisions of this standard can be interpreted as discharging trichinae treatment requirements.

(c)(1) The entire exterior of the ham or pork shoulder shall be coated by the dry application of salt or by the dry application of salt combined with other ingredients as permitted in paragraph (d) of this section.

(2) Additional salt, or salt mixed with other permitted ingredients, may be reapplied to the product as necessary to insure complete penetration.

(3) When sodium or potassium nitrate, or sodium or potassium nitrite, or a combination thereof, is used, the application of

continued on page 2

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salt shall be in sufficient quantity to insure that the finished product has an internal salt content of at least 4 percent.

(4) When no sodium nitrate, potassium nitrate, sodium nitrite, potassium nitrite or a combination thereof is used, the application of salt shall be in sufficient quantity to insure that the finished product has a brine concentration of not less than 10 percent or a water activity of not more than 0.92.

(5) For hams or pork shoulders labeled ``country'' or ``country style,'' the combined period for curing and salt equalization shall not be less than 45 days for hams, and shall not be less than 25 days for pork shoulders; the total time for curing salt equalization, and drying shall not be less than 70 days for hams, and shall not be less than 50 days for pork shoulders. During the drying and smoking period, the internal temperature of the product must not exceed 95 F., provided that such temperature requirement shall not apply to product dried or smoked under natural climatic conditions.

(6) For hams or pork shoulders labeled ``dry cured,'' the combined period for curing and salt equalization shall not be less than 45 days for hams, and shall not be less than 25 days for pork shoulders; and the total time for curing, salt equalization, and drying shall not be less than 55 days for hams and shall not be less than 40 days for pork shoulders.

(7) The weight of the finished hams and pork shoulders covered in this section shall be at least 18 percent less than the fresh uncured weight of the article.
the total time for curing, salt equalization, and drying shall not be less than 55 days for hams and shall not be less than 40 days for pork shoulders.

(d) The optional ingredients for products covered in this section are:

1) Nutritive sweeteners, spices, seasonings and flavorings.

(2) Sodium or potassium nitrate and sodium or potassium nitrite if used as prescribed in this section and in accordance with a regulation permitting that use in this subchapter or 9 CFR Chapter III, Subchapter E, or in 21 CFR Chapter I, Subchapter A or Subchapter B.

With such stringent standards and such a unique market, it is amazing that approximately seven million country-cured hams and their associated products are marketed in the United States each year. Although normally considered as a Appalachian Region (Kentucky, Tennessee, Virginia, etc.) product, the demand for this niche market has grown over the past several years due to population shifts, relocation to non-traditional locations, and immigration of various ethnic populations. In addition, the tremendous quality and marketability possessed by this product due to its uniqueness has led to its introduction in fine dining establishments and mail order firms throughout the country. Many premier chefs are now utilizing these products in innovative dishes.

This resurgence, however beneficial to the small industry, has led to increased potential for mishandling and preparation due to a lack of understanding of the product. In addition, the original classification by USDA of country-cured ham as a ready-to-eat product along with the fact that country-cured hams are a shelf stable product, has contributed to this misunderstanding by populations of consumers unfamiliar with these products.
In December 2000, a recall was issued for a country ham product that tested positive for *Listeria monocytogenes*. This recall, although not related in any illnesses or deaths, played a major factor in the events leading to how country-cured ham products were being regarded by USDA-FSIS. Although the USDA testing for *Listeria monocytogenes* in this product considered by the industry to be not-ready-to-eat (NRTE) was questionable, it supported recent research conducted at the Universities of Kentucky and Georgia that the unique drying

of this product was essential to achieving microbial safety. Prior to the recall USDA had released Directive 10,240.2 which placed country-cured hams into the **Ready-to-Eat (RTE) Product Category**– Products that are intended to be consumed without any further safety preparation steps. This action indicated that FSIS would sample and test RTE products produced under the following processing categories:

not heat treated—shelf stable (9 CFR 417.2(b)(v), ISP activity number 03E)
heat treated—shelf stable (9 CFR 417.2(b)(vi), ISP activity number 03F)
fully cooked—not shelf stable (9 CFR 417.2(b)(vii), ISP activity number 03G)
product with secondary inhibitors—not shelf stable, (9 CFR 417.2(b)(ix), ISP number 03I).

In the weeks following this recall USDA-FSIS later determined that country-cured hams could indeed fall into both RTE and NRTE categories to be determined by the processor. However, FSIS was adamant that if products were to indeed be labeled as NRTE, then they must proclaim on the label cooking instructions that had been validated for safety.

Also at issue was whether products must maintain the complete Safe Handling Instruction (SHI) label since the products were indeed shelf stable. Personal communication with the Director of Labeling and Consumer Protection, USDA-FSIS revealed that the SHI may be altered related to handling if it is in conflict with the product's specific handling instructions. The 9 CFR 317.2 (k) (3) (i) states that the "keep refrigerated or frozen, thaw in refrigerator or microwave" statement may be omitted if the present labeling bears instruction that are in conflict (e.g., "can be stored without refrigeration" or "shelf stable"). The attached product classification chart dictates to processors those items that must be addressed once the status of classification is determined.

In conclusion, the issues facing the country-cured ham industry during the past year have been monumental and confusing. To summarize the newfound issues which must be addressed:

- Processors must identify products as RTE or NRTE and follow associated regulations and directives.
- Products identified as NRTE must have validated cooking instructions on the label.
- If products are to be labeled as shelf stable, omitting the refrigeration statement and icon from the safe handling instruction label, there must be a statement indicating the product is shelf stable.

Finally, processors must take care during the production phase to ensure that products are appropriately cured and dried to maintain microbial integrity. Regardless of whether the product is marketed as RTE or NRTE this practice will optimize the safety of the product and enhance the reputation of the industry. For such a small industry to, not only maintain, but persevere through these issues is a testament to their commitment to providing the safest, highest quality product possible.

References

Code of Federal Regulations, Title 9, Volume 2, Parts 200 to end. Revised as of January 1, 2001.
9CFR319.106; Page 300-301

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