**UNITED STATES DEPARTMENT OF AGRICULTURE**
**FOOD SAFETY AND INSPECTION SERVICE**
**WASHINGTON, DC**

| # FSIS DIRECTIVE | 6700.1 | 11/27/2002 |
|---|---|---|

## RETAINED WATER IN RAW MEAT AND POULTRY PRODUCTS

### I. PURPOSE

This Directive provides instructions to inspection program personnel on the procedures for conducting inspection activities concerning the consumer protection standards for retained water in raw meat and poultry products. (**NOTE: THIS DIRECTIVE IS NOT EFFECTIVE UNTIL JANUARY 9, 2003).**

### II. [Reserved]

### III. [Reserved]

### IV. REFERENCES

9 CFR Section 441.10

### V. BACKGROUND

A. Raw, single-ingredient meat and poultry products that retain water as the result of post-evisceration processing in excess of naturally occurring moisture are subject to the retained water regulations. Section 9 CFR 441.10, which becomes effective January 9, 2003, allows for retained water in raw livestock and poultry carcasses and parts only to the extent that it is an unavoidable consequence of a process used to meet applicable food safety requirements. The amount of water retained in the product in excess of naturally occurring moisture must be prominently declared on the label. Any establishment that uses a post-evisceration process that results in water retention in a raw livestock or poultry carcass or part must maintain on file a written data-collection protocol in accordance with 9 CFR 441.10 (c)(1). Establishments' protocols and procedures are to be available to FSIS. An establishment does not have to maintain a protocol on file if it has data or information that clearly demonstrate that its products do not retain water as a result of the process, e.g. spraying boneless meat with antimicrobials where the end product does not retain water from the antimicrobial application process.

B. Establishments may include a no-retained-water statement on the label when product has not been exposed to a post-evisceration process that adds water, or the establishment has data or information that establishes that the process does not add water to the product.

C. FSIS does not require official establishments to use any specific method to make a retained water determination. The method chosen in calculating water absorption and retention, however, should be reproducible and verifiable. For example, an establishment may use physical water pick-up tests, weighing carcasses post-evisceration, before the use of water directly contacting product, and again just prior to final packaging and labeling. Likewise, an establishment may develop its protocol based on laboratory analysis for naturally occurring and total water content of carcasses before and after the application of water for food safety purposes.

D. In-plant inspection program personnel who have questions about the validity of the method being used by an establishment should consult the Technical Service Center (TSC).

## VI. POST-EVISCERATION PROCESS

A. The following are examples of post evisceration processes involving the use of water that would subject products to the requirements of 9 CFR 441.10 (Retained Water):

1. Post-evisceration washing of livestock and poultry carcasses with hot water, cold water, or an antimicrobial, including on-line reprocessing systems.

2. Livestock carcass spray chilling with or without an antimicrobial.

3. Water or ice chilling of poultry carcasses or giblets with or without an antimicrobial.

4. Water or ice chilling with or without an antimicrobial used to remove heat from parts: hearts, kidneys, livers, tongues, cheeks, salivary glands, spleens, pancreases, ears, tails, or head meat trimmings, including head meat, cheek meat, or tongue meat.

5. Post chill spraying of meat and poultry carcasses or parts, with water or an antimicrobial solution.

6. Spraying byproducts (e.g. hearts, livers, tongues, cheeks, salivary glands, spleens, pancreases, chitterlings, stomachs, ears, and tails) with an antimicrobial after they have been converted from their natural state to an edible state (e.g., after the lining has been removed from tripe, and the tripe has been cleaned).

7. Spraying bones with an antimicrobial used for advanced meat recovery systems or for mechanical deboning.

8. Spraying meat trimmings, including head meat, cheek meat, or tongue meat, with an antimicrobial solution.

B. The following are examples of post evisceration processes involving the use of water that would not subject products to 9 CFR 441.10.

1. Flushing stomachs, small intestines, large intestines, rectum, braided marrow gut, and chitterlings to remove digestive tract contents.

2. Scalding of pork stomachs, pork tongues, and beef lips, intestines, and stomachs.

3. Flushing the gizzard with water to remove digestive tract contents.

4. Washing with water to remove excess blood, e.g. washing hearts, livers, brains, and tendons.

5. Washing beef heads with water.

**Note:** On a case-by-case basis, the Inspector-in-Charge (IIC), in consultation with his or her supervisor and the TSC, will evaluate other post evisceration processes involving the use of water to determine whether the resulting products are subject to 9 CFR 441.10.

## VII. VERIFICATION PROCEDURES

A. When directed by PBIS-generated procedure 04B04, the IIC will verify the establishment's compliance with the other consumer protection (OCP) requirements of 9 CFR 441.10 by reviewing and analyzing the establishment's data and by observing the processes carried out by the establishment. The IIC will:

1. verify that the establishment has on file and available to FSIS its written data-collection protocol (9 CFR 441.10(c)(1)) or data that demonstrate that the process does not result in retained water in excess of naturally occurring moisture; and

2. review all changes or revisions to an existing protocol. An IIC should inform an establishment that it should notify him or her whenever it has a new protocol, has made changes to an existing protocol, or has changed its processing procedures in a manner that would require a new or revised protocol.

**Note:** Establishments that develop new protocols or revise existing protocols should submit the new or revised protocol to FSIS for review by the Technology Program Development Staff (TPDS) of the Office of Policy and Program Development (OPPD):

by mail to: USDA/FSIS/OPPD/TPDS
1400 Independence Ave., SW
Room 405
Cotton Annex
Washington, DC 20250;
or by fax to: (202) 205-0080;
or by e-mail to: tpds.protocols@usda.gov

9 CFR 441.10(d) lists the elements to be included in the protocol. FSIS will notify establishments of the outcome of the review in no more than 30 days after the Agency receives the protocol with either a no-objection letter, or a letter listing the Agency's objections to the submitted protocol. Establishments may choose to implement a new or revised protocol and use a label reflecting the new percentage water gain before receiving FSIS notification of the review outcome. If the FSIS protocol review identified objections or requires changes to the submitted protocol, the establishment will be expected to modify the protocol, and if necessary, the retained water statement.

3. Verify that the establishment is following its protocol, and that the protocol reflects the actual processing system in use.

4. Calculate the total retained water in the product using establishment data to verify that the percent retained water declared on the label is supported by the data generated by the protocol. The percent retained water should be within the sampling variability or the allowed labeling variation. That is, continuing measurements of actual retained water demonstrate that it is within 20 percent of the declared retained water level for the product.

B. Inspection program personnel are to document non-compliances on a Non-Compliance Record (NR), FSIS Form 5400-4, if:

1. the establishment has a product covered by 9 CFR 441.10 without a protocol or data or information that clearly demonstrate that the product does not retain water as a result of a given process;

2. the establishment is not following the written protocol;

3. the retained water declared on the label is less than the level actually retained in the product as determined using the protocol, considering the allowable and appropriate variation; or

4. the establishment records are incomplete and do not allow for the verification of the accuracy of the retained water label declaration.

**Note:** IICs who, based on observation or data analysis and actual calculations, have reason to believe that an establishment may be systematically adulterating or misbranding its products should submit their information through supervisory channels to the district office. The District Manager will determine the course of action to take.)

## VIII. LABELING REQUIREMENTS

A. Inspection program personnel are to verify that the labeling of raw single-ingredient products accurately declares any water retained by carcasses or parts of carcasses resulting from post-evisceration processing that was done to meet applicable food safety requirements. Carcasses or parts of carcasses may be whole, cut-up, or ground. Refer to attachment 1 and 2 for additional labeling questions and answers and examples of products. Some labeling principles are:

1. Any water retained besides naturally occurring moisture in such products must be reflected in a prominent statement on the principal display panel of the product label, e.g., up to X percent retained water, or may contain up to X percent absorbed water.

2. The generic labeling regulations 9 CFR 317.5 and 9 CFR 381.133 and the nutrition labeling regulations in Part 317 Subpart B and Part 381 Subpart N apply to retained water products as they apply to other single-ingredient products.

3. The permitted labeling variation is 20 percent from the declared amount within the retained water statement.

B. Multi-ingredient product labeling is not affected by retained water in a meat or poultry component. Thus, retained water is not an ingredient, and the retained water statement on meat or poultry components is not an ingredient declaration. Refer to attachment 2 for multi-ingredient product examples.

1. Any retained water in raw meat or poultry items used as ingredients would not be declared on the labeling of multi-ingredient products, e.g., raw or cooked sausage, pre-basted turkeys, or deli meats.

2. Retained water has no effect on the declared amount of flavor solution in basted, marinated, injected, tumbled, etc. products.

3. Standards of identity or composition are not affected by the retained water rule.

## IX. IMPORT PRODUCT

Import raw single ingredient meat and poultry products that bear an X percent retained water statement, or a statement declaring no retained water, may be sampled periodically during port-of-entry reinspection to verify labeling claims. Exporting country

inspection systems are responsible for performing functions equivalent to those set forth in this Directive and for certifying that products for export to the United States meet FSIS import requirements. FSIS will verify the equivalence of exporting country water retention regulatory programs during annual on-site audits.

*Philip S. Derfler /s/*

Deputy Administrator
Office of Policy and Program Development

## Additional Labeling Questions and Answers

1. If a plant determines through testing that the amount of retained moisture in a particular item is a fractional percentage (e.g., 0.3, 0.4, 0.5, or 1.3 percent, etc.), how would the agency expect this to be labeled?

**Answer:** As with nutritional labeling, rounding rules would apply (i.e., round to the nearest whole number). Therefore, labeling of fractional percentages of retained water would not be required. For example, 0.5 percent-retained water is rounded up to 1 percent and 1.3 percent is rounded down to 1 percent.

2. Are labeling statements permitted explaining the purpose of the retained water, e.g., "for safety purposes contains up to X percent retained water?"

**Answer:** Explanatory statements regarding the retained water will be reviewed by the Labeling and Consumer Protection Staff on a case-by-case basis since they are viewed as special claims. The statements will be evaluated to determine whether they misrepresent products or imply that products are safer than other similarly chilled products.

3. Is there a size requirement for the prominent lettering in the retained-water statement?

**Answer:** There is no letter size requirement for the percent-retained-water statement, but if the lettering is inconspicuous or not visible to consumers with normal visual acuity, it is not prominent. Prominence is determined by several factors, including size of lettering in the statement compared with other lettering on the label, location of the statement, and color contrast between the lettering and the background.

4. Can the term "moisture" be used instead of the term "water" within the retained water statement?

**Answer:** The term "moisture" is not acceptable since it does not convey the specific substance used during the post-evisceration chilling of the product.

5. Is the retained water statement required on a shipping container label when the product inside is packaged and labeled?

**Answer:** The shipping container is not required to bear a retained water statement since the regulation addressing the labeling of retained water products applies to the principal display panel of immediate containers. Shipping containers holding packaged and labeled products do not have principal display panels.

6. Most meat carcasses, half carcasses, and primals are shipped from the establishment with only the mark of inspection identifying them. If the carcass gains water as a result of the chilling process, a water retention statement is required. How could an establishment meet this requirement if it is shipping full and half carcasses and primals to other establishments for further processing into retail cuts, ground beef, etc?

**Answer:** Retained water in red meat carcasses, half carcasses, quarters, primals, or byproducts that are simply branded with a mark of inspection would also need to be declared with a prominent retained water statement. This could be accomplished by adding the retained water statement by branding or affixing with a secure tag.

7. Can pressure sensitive stickers be used to modify the percent-retained water statement and is handwriting permitted for the value of the retained water?

**Answer:** Pressure sensitive stickers may be applied to labeling to modify the percent-retained water statement. This type of change is a generic approval. Handwriting is not permitted for the value of the retained water because a legibility factor involved with handwriting. The value should be uniform and produced by mechanical means as with other mandatory features.

8. The label contains a "no retained water" claim. Does the 20 percent variation apply?

**Answer:** The 20 percent variation permitted for the retained water statement would not apply when a no retained water claim is made on labeling. Rounding rules apply. Thus, the product could not retain more than 0.49 percent water such that the rounded amount of water is 0 percent.

9. How does retained water affect restricted ingredients, e.g., bacon?

**Answer:** The levels for restricted ingredients remain the same as indicated in the substance chart, 9 CFR 424.21(c), e.g., sodium nitrite and sodium erythorbate are based on the weight of the meat or poultry product regardless of the amount of water possibly retained in the meat or poultry as a result of post-evisceration processing.

10. Does the regulation cover products that may be treated with water which produces no gain in net weight of the finished product?

**Answer:** The regulation, including its requirement of the submission of protocols, deals with products for which the manufacturer anticipates a particular moisture-based weight gain, is targeting its procedures to control that gain, and will label its products accordingly. As a result, establishments that anticipate zero weight gain are not required to develop and submit protocols. Such establishments should, however, maintain records that demonstrate through data or information that their product does not gain water as a result of the process.

11. Does the regulation apply to intermediate (in-process) processing steps?

**Answer:** No. The regulation focuses on the labeling of single-ingredient finished products as they leave the establishment. Procedures, such as the application of antimicrobial solutions or of water that may temporarily contribute weight to the product, need not be declared. However, establishments are expected to maintain data clearly demonstrating that the finished products do not retain water.

12. Is it acceptable to export products with retained water without labeling bearing a percentage retained water statement?

**Answer:** Deviations from domestic labeling rules are permitted in accordance with 9 CFR 317.7 or 381.128. However, the labeling record should contain documentation in the form of a letter that is required from an official with the foreign government or the importer in the country to which the product is destined. The letter would specify that country's laws that would permit the deviations.

13. Can one letter be applied to multiple products for export?

**Answer:** Yes, if the letter is complete by indicating all exported products with labeling deviations and is only for the country to which the products are destined.

14. Does the retained water rule apply to ice-glazed poultry?

**Answer:** Yes. A retained water statement is required because the product is single ingredient regardless of whether the product is ice-glazed or not. The ice-glaze is not an ingredient; its purpose is to prevent shrinkage during freezing.

15. How are single-ingredient products with retained water (e.g., bearing contains X percent retained water statements) handled when they are sent in bulk to retail stores for packaging? What effect would in-store cut-up or grinding operations have on the labeling of single-ingredient products with retained water at the retail store?

**Answer:** The retained water statement that is applied to the cuts or ground products would be the same as the retained water statement that was applied to the bulk product. However, the retail store may choose to show through documentation that less or no water is retained in the cuts or ground product and to label the product accordingly.

16. What happens to a product when the retained water declaration exceeds the 20 percent label declaration?

**Answer:** The company has two options. One is to accurately relabel the product. The other option would be to allow the product to drain so that the retained water statement is truthful. This may involve re-packaging the product unless the product is ice pack poultry in drainable containers.

17. How is the retained water statement handled with chitterlings since the product is allowed to be packaged with up to a 20 percent purge?

**Answer:** Many years ago, before 1992, FSIS allowed, under normal conditions and good manufacturing practices, purge in containers of chitterlings not to exceed 20 percent of the marked weight of the product. The policy is long-held and is practiced industry wide. Consumers who purchase this product are aware of the policy and practice and have come to expect moisture content in chitterlings. As a result of this long-standing policy, no retained water statement is required when chitterlings are packaged with a purge. If chitterlings retain water during post evisceration processing and are not packaged with a purge, the product's labeling is required to bear a retained water statement.

18. What is FSIS position regarding the use of water in thawing process?

**Answer:** Frozen meat, meat byproducts, poultry, or poultry byproducts are often thawed using chilled water. Establishments have to assess whether the product is absorbing water during the thawing process. If the final product is raw, single-ingredient, and absorbed water during the thawing process, a retained water statement is necessary. However, if the final product is subsequently processed into a multi-ingredient item or cooked, the retained water is not a labeling or standards concern.

## Product Examples

Example 1

Basted turkey injected with up to 3 percent flavor solution is made with turkey containing 3 percent absorbed water. The ingredient declaration would not identify any retained water in the turkey that would have possibly been absorbed during post evisceration processing in the slaughter establishment because the retained water is not an ingredient. The retained water in the turkey would not affect the 3 percent flavor solution injected into the product and declared as part of the product name.

Example 2

Beef and Turkey Italian Sausage contains starting material that is labeled as "turkey containing 3 percent retained water." The ingredient declaration would not identify the retained water in the turkey because the retained water is not an ingredient. The post evisceration retained water in the turkey would not affect the 3 percent added water limit for the finished product that is established by the standard of identity or composition. Water adedd to facilitate mixing to dissolve ingredients is an ingredient and is permitted up to 3 percent in raw sausage.

Example 3:

When beef trimmings that have been sprayed with chilled water so that they contain 5 percent retained water are used to make a single ingredient raw ground product, like ground beef or hamburger, the resulting product must be labeled to declare any retained water above naturally occurring water. Also, single-ingredient ground poultry produced from poultry containing retained water would be required to be labeled to declare any retained water above naturally occurring water. The retained water would not affect compliance with the standard, i.e., no added water, because retained water is not an ingredient. If the products were subsequently cooked, the retained water would have no effect on the finished product or it's labeling.