

Announcing the Availability of a Draft Procedure for Determining the Amount of Purge from Chitterlings

THE NIST OFFICE OF WEIGHTS AND MEASURES REQUESTS COMMENTS ON THE DRAFT PROCEDURE THAT WAS DEVELOPED FOR INCLUSION IN THE NIST HANDBOOK 133, "CHECKING THE NET CONTENTS OF PACKAGED GOODS."

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Over the past years, the Office of Weights and Measures (OWM) received requests from several states and meat packers for guidance on how to determine the amount of purge in packages of frozen chitterlings¹ using NIST Handbook 133, "Checking the Net Contents of Packaged Goods."² Since Handbook 133 does not include test procedures or requirements that limit the amount of purge from these products, OWM, in collaboration with several weights and measures inspectors and meat packers, has developed a draft procedure based on existing Handbook 133 procedures and guidance from the U.S. Department of Agriculture (USDA). You are invited to review and evaluate the draft procedure and the proposal to add the procedure and purge limitations to Handbook 133. OWM may submit the proposal to the NCWM this fall for consideration at the 2015 National Conference on Weights and Measures (NCWM) Interim Meeting, so we would like to receive your comments by September 30, 2014.

What are Chitterlings?

The definition of chitterlings is in the 9 CFR Ch. III § 317.8 (30) –

The term "Chitterlings" shall apply to the large intestines of swine, or young bovine animals when preceded with the word "Calf" or "Veal." Meat food products that contain chitterlings or calf or veal chitterlings, in accordance with § 318.6(b)(8) of this subchapter shall be identified with product names that refer to such ingredients, as for instance, "Chitterling Loaf," "Chitterling Pie," or "Calf Chitterlings and Gravy."

According to the USDA, chitterlings are a popular food served in many parts of the United States, the Caribbean, Latin America, western Asia, and Europe. Also called "chitlins," as defined above, they are the large intestines of swine (hogs) or calves. According to one industry source, chitterlings are eaten year round but about 90 % are sold during the Thanksgiving, Christmas, and New Year holidays. They are also used as casings for some sausages. Chitterlings became a traditional winter food of the South during Colonial times when, before refrigeration, hogs were slaughtered in December. Their texture is similar to calamari (squid). After a lengthy boil, chitterlings are sometimes battered and fried and are commonly served with cider vinegar and hot sauce as condiments.

Chitterlings are Primarily Tested on a Complaint Basis.

When weights and measures inspectors test frozen chitterlings, they determine if the packages contain the labeled net weight and if the amount of purge is 20 % or less than the declared quantity. Inspectors use Section 2.3. "Basic Test Procedure" of Handbook 133 to conduct net weight tests. To determine the

¹ Note that this procedure can also be used to test beef tripe.

² The U.S. Department of Agriculture (USDA) adopted the 2005 edition of the NIST Handbook 133, "Checking the Net Contents of Packaged Goods."

amount of purge, inspectors use the equipment and procedure in Section 2.6. “Determining the Net Weight of Encased-in-Ice and Ice Glazed Products” with some modifications to carry out their test. The modifications include thawing the product in the package and applying a purge limit published by the Food Safety and Inspection Service (FSIS) of the USDA. Inspectors defer to the USDA value because a purge limit is not specified in Handbook 133. The USDA recommends that purge determinations be conducted in the plant after packing but before the chitterlings are frozen. State inspections at retail are usually carried out in response to local consumer complaints. Over the past few years, the majority of state inspections have found the purge levels from chitterlings to often be more than 20 %. As early as 2010 inspectors from several states contacted OWM for technical assistance because of disputes with packers over the test procedures used to determine purge results. The states report they found purge from domestic and foreign packers as high as 50 % or more. As a result, packers and inspectors were both looking at packing practices and the test procedure to find an explanation for the high values.

In addition to the test data from inspectors and multiple packers already mentioned, a recent study conducted at Iowa State University on the purge from several brands of frozen chitterlings found purge that ranged from 30 % to 50 %. OWM reviewed the test methods used by the states, Iowa State University, and several chitterling packers to identify opportunities for improving the accuracy and repeatability of the test procedure. A few differences between the test procedures used by packers and state inspectors were found, but overall the approaches to testing appeared to be consistent. Handbook 133 does not include a purge test, and there appears to be a need for a test procedure tailored specifically for use with chitterlings. Adoption and use of a uniform procedure should improve test uniformity and increase the agreement of test results found inside packing plants and at retail locations.

Further study is needed of the methods used to thaw frozen chitterlings. Thawing out large packages of chitterlings takes an extensive amount of time and is labor and resource intensive. For example, if a water bath is used, a large amount of warm water is needed to thaw out a sample of 12 - 10 pound buckets. If quicker thawing techniques could be identified, they may improve productivity and reduce costs for both packers and officials. Another effort that may benefit packers would be to identify and share good packing and filling practices to help industry reduce variations in their packing process. The purge values on different lots tested by the states and in the university study varied significantly and variations between a few packers were noted. Reducing variability is often beneficial to packers and consumers and can sometimes be achieved with minor changes in the filling process.

Perhaps the most significant issue that needs further study is the 20 % limit which ostensibly is appropriate for fresh chitterlings but may be too low for frozen chitterlings. Several packers reported that they target their purge levels for fresh chitterlings to be below 7 % to 10 % as a way to comply with FSIS requirements and avoid consumer complaints. Yet, some chitterlings from packers that target those low purge values still do not meet the 20 % limit when thawed and tested using the modified Handbook 133 procedure. A different purge limit for frozen chitterlings may be justified because the cell walls are destroyed during freezing (the breaching of the cell wall releases fluid that increases purge).

To download the draft procedure, go to:

<http://www.nist.gov/pml/wmd/pubs/upload/chitterling-test-procedure-final-aug14-2014.pdf>

Comments can be submitted to owm@nist.gov.