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Standard Test Method for Livestock, Meat, and Poultry Evaluation Devices¹

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1. Scope

1.1 This test method covers test methods used to determine the accuracy of electronic devices that evaluate composition or quality constituents of livestock, meat, and poultry.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

F2463 Terminology for Livestock, Meat, and Poultry Evaluation Systems

2.2 *NIST Standard:*³

NIST Handbook 44 Electronic Livestock, Meat, and Poultry Evaluation Systems and/or Devices

3. Terminology

3.1 For definitions relating to livestock, meat, and poultry evaluation systems, see Terminology F2463.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *error, n*—difference between the “true” value of a reference material and the indication received from an electronic evaluation device or system.

3.2.2 *meat, n*—all edible products and edible by-products harvested by the meat-packing industry.

3.2.3 *reference material, n*—physical object used as a basis for comparison or calibration.

3.2.4 *test, n*—procedure for determining a characteristic by direct measurement.

3.2.5 *tolerance, n*—value fixing the limit of allowable error or departure from true performance or value.

3.2.6 *value, measurement, n*—data point or indication representing the outcome of a measurement or observation.

4. Significance and Use

4.1 Characteristics of livestock, meat, and poultry can be used to determine value. Devices have been and are currently under development to evaluate these characteristics. The use of this test method will assist manufacturers, users, and regulating authorities to refer to uniform test methods to determine if the devices are accurate.

5. Apparatus

5.1 Reference materials may include, but are not limited to, test blocks to verify linear measurements for ultrasound and linear probes, “phantom carcasses” to verify non-linear measurements used in devices that use magnetic energy absorption, photographic plates for visual imaging devices, or other means to verify a characteristic.

5.2 Manufacturers provide reference materials to use in the initial setup and calibration of evaluating devices before use; these reference materials can be used as standards for ensuring accuracy after they are verified and documented by an independent third party. Reference material shall be uniquely identified (for example, serial number) and retained for additional testing and calibration to ensure the accuracy of the device as it is being used over time.

5.3 Verification of the reference material requires: (1) that the reference materials stated measurements are accurate (this requires that the error of the labeled measurements can not be greater than one-third of the smallest allowable error acceptable when the reference material is used to verify an evaluating device), and (2) the reference material is an appropriate proxy for the characteristic being evaluated by the device or system (the reference material is considered appropriate if it is has been designed to be used as a reference material, and it is constructed to retain its characteristics for a reasonable period of time under conditions of normal use).

¹ This test method is under the jurisdiction of ASTM Committee F10 on Livestock, Meat, and Poultry Evaluation Systems and is the direct responsibility of Subcommittee F10.20 on Device Performance Criteria.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

³ Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov>.