

Chapter Ag 107

SAMPLING AND TESTING MILK AND CREAM

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History: Chapter Ag 107 as it existed on March 31, 1976 was repealed and a new chapter Ag 107 was created effective April 1, 1976.

Ag 107.01 Definitions. As used herein:

(1) "Department" means the state of Wisconsin department of agriculture.

(2) "Sample" means a representative sample of milk or cream used for testing to determine butterfat content, value, quality and other properties or characteristics of the milk or cream from which the sample is taken.

(3) "Ounce" means fluid ounce.

(4) "Sampler" means a milk weigher and sampler licensed under s. 98.146, Stats., or a cheesemaker or buttermaker licensed under s. 97.17, Stats.

(5) "Fresh milk sample" means an unpreserved milk sample.

(6) "Preserved fresh milk sample" means a fresh milk sample preserved with potassium dichromate and intended for use in dairy herd improvement association (DHIA) or other recognized production record testing programs.

(7) "Composite sample" or "composite milk sample" means a milk sample preserved with an approved chemical and built-up as prescribed in this chapter for use in the testing of milk for a given pay period.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.

Ag 107.02 Licensing milk weighers and samplers. (1) In addition to the initial examination required for the issuance of an original milk weighers and samplers license under s. 98.146, Stats., the applicant shall, as a condition to the first year's renewal thereof, satisfactorily pass a second and more comprehensive in-depth written examination prepared by the department.

(2) Every fifth year after a milk weighers and samplers license has been in effect, the department may, as a condition of renewal thereof, require re-examination, unless the applicant has satisfactorily completed a training course approved by the department within the immediate preceding 5-year period.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.

Ag 107.03 Collection and care of samples. (1) **CONTAINER REQUIREMENTS.** (a) Sample containers shall be constructed of transparent materials and be in a clean, sanitary and dry condition prior to use. Glass or

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rigid plastic containers used for fresh milk samples shall be equipped with over-the-lip closures.

(b) 1. Fresh milk sample containers shall be of sufficient size and capacity to hold a sample large enough to permit two tests of the particular test to be applied to the sample, and to permit the thorough mixing of a sample prior to its use for testing or the building of a composite sample.

2. Fresh milk sample containers shall in no event have a capacity of less than 3 ounces (90 milliliters), without the prior written approval of the department. No approval shall be granted unless the plant can demonstrate to the satisfaction of the department that because of test methods and procedures used, a smaller sample container will suffice to meet requirements under subd. 1.

(c) Composite sample containers shall have a minimum capacity of 8 ounces (240 milliliters).

(d) Composite sample containers shall bear legible letters or numbers identifying each patron's sample. Fresh milk sample containers shall bear such identifying letters and numbers and also the date of collection of the sample by the sampler. Identifying letters or numbers, and the date of collection, shall be placed on the container by the sampler at the time a fresh milk sample is taken. When a patron discontinues shipping milk or cream to a particular plant, the letters or numbers used by the plant to identify samples of such patron's milk shall not be reused to identify milk samples of any other plant patron for a period of at least 90 days.

(2) **SAMPLE PROCEDURES.** (a) *Weigh tank sampling.* If milk is poured into a weigh tank, the weigh tank shall be constructed in such a manner that the pouring of the milk into the tank results in complete mixing of the milk. A fresh milk sample of each weighing shall be taken immediately after the milk have been poured in the weigh tank. Where multiple weighings of a patron's milk shipment is required, the number of cans of milk poured into the weigh tank in any one weighing shall be equalized as nearly as possible, and the entire contents of each can shall be included in each separate weighing. Where multiple weighing of a single delivery is required, a separate sample shall be taken of each weighing, using a separate sample container.

(b) *Farm milk tank sampling.* 1. Each sampler shall grade milk by appearance and smell prior to accepting it and loading it on the bulk milk truck. The sampler shall reject all off-flavor or off-odor milk and milk which contains visible garget and extraneous matter. If in doubt the sampler shall, before accepting the milk, call the dairy plant and request inspection by a plant quality control officer or other person experienced in the grading of milk by flavor and odor.

2. Samplers shall take and record the temperature of the milk prior to accepting it and loading it on the bulk milk truck. Milk in excess of 50° Fahrenheit shall be rejected.

3. Samplers shall wash their hands after checking temperature and before measuring the milk.

4. Samplers shall take and record an accurate measurement of the amount of milk in the farm bulk tank by the reading of a clean gage rod. The gage rod shall be rinsed with warm potable water and wiped dry

with a clean disposable towel immediately prior to its use. The milk shall be allowed to become motionless before the gage rod is inserted into the bulk tank for a reading. Immediately after the reading, samplers shall convert the reading to pounds or gallons, using the conversion chart of the bulk milk tank manufacturer, and record such reading on a duplicate collection record, one copy of which is to be posted in the milkhouse and the other submitted to the dairy plant.

5. The collection record for each patron shall include the patron's identification letters or numbers, the temperature and quantity of milk collected, the date of collection and sampling, and shall be signed by the sampler.

6. The sampler shall cause the milk from which a sample is to be taken to be agitated for at least 5 minutes or more prior to the taking of a sample. The sampler shall take at least a 2 ounce representative fresh milk sample for each collection and delivery of a patron's milk. Patron identification and date of sampling and collection shall be placed on the sample container. The sample shall, immediately after it is taken, be placed in a rack in a water or ice bath to maintain its temperature between 32-40° Fahrenheit. No samples of less than 2 ounces may be taken without the prior written approval of the department. Such approval may be granted only where the plant can demonstrate to the satisfaction of the department, that comparable test results can be achieved by the taking of a smaller sample.

7. The sampler shall ensure that the milk truck hose cap is protected from contamination at all times and that the bulk tank outlet valve is clean and sanitary before the hose is connected to the bulk tank. Milk may be pumped only into bulk trucks meeting sanitary and equipment standards of Wis. Adm. Code chs. Ag 30 and 80.

8. After pumping the milk from the bulk tank, the milk hose shall be disconnected from the tank, capped and returned to the bulk milk truck cabinet. The farm bulk tank shall be rinsed with cold or warm water after it has been emptied, but not until after the milk pump has been shut off and the milk truck hose disconnected from the tank and capped.

9. The sampler shall provide the dairy plant with a representative sample of all milk delivered to it, and an accurate collection record for each patron's milk at the time of delivery of the milk to the plant.

(c) *Fresh milk sample size.* The size of the fresh milk sample shall be large enough to permit a retesting by the dairy plant or its testing agency, or the department, but in no case shall the sample be less than 2 ounces (60 milliliters) without the prior written approval of the department. Such approval may be granted only where the plant can demonstrate to the satisfaction of the department, that the sample taken will permit thorough mixing and at least one retest for each test to be made of the milk.

(d) *Composite samples.* A composite sample of a patron's milk shall consist of a representative sample of each delivery of milk made to a dairy plant within a given pay period, equal in amount to at least 10 milliliters of milk for each days production included in such deliveries. In no event shall a completed composite sample consist of less than 150 milliliters for a 15 day milk delivery period. When milk is frozen or otherwise delivered in such a condition as to prevent adequate mixing, a

sample of such milk shall not be taken and a notation shall be made on the collection sheet that a sample was excluded from the composite container. The composite sample shall be built-up as follows:

1. For bulk milk deliveries, by transferring 10 milliliters of milk for each days production from each fresh milk sample to the composite sample container. Such transfer shall be made on the same day or by 10 o'clock a.m. of the day following the day on which the fresh milk sample is collected.

2. For can milk deliveries, by transferring 10 milliliters of milk for each days production directly from the milk weigh tank to the composite sample container immediately after the milk is poured into the weigh tank.

(3) CARE AND STORAGE OF SAMPLES. (a) All milk samples other than preserved fresh milk samples shall be kept tightly covered and maintained at a temperature between 32 and 40° Fahrenheit at all times including transportation and storage.

(b) Milk samples may be transported from dairy plants to a central laboratory for testing only on prior written approval by the department.

(c) Composite samples shall not be kept out of refrigeration at the plant any longer than necessary to complete the building of the composite samples from fresh milk samples, or the completion of weighing and sampling operations for each truckload can delivery. The transporting of composite samples from the dairy plant or laboratory to a farm is prohibited. A preservative approved by the department shall be used in the building of each composite sample. The preservative may consist of a bichloride of mercury (corrosive sublimate) tablet which shall weigh not more than one gram and contain not less than 2.5 nor more than 3.5 grains of bichloride of mercury. Potassium dichromate or any other preservative may be used as a preservative for composite samples upon written approval of the department.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.

Ag 107.04 Testing of samples. (1) TEST METHODS. Bufferfat tests of fresh milk samples may be made by the ether extraction or Babcock test, the Milko-Tester, or other test method approved by the department.

(2) ETHER EXTRACTION OR BABCOCK TEST. (a) All ether extraction or Babcock tests shall, except as provided under pars. (b) and (c), be conducted as prescribed in the 1970 edition of "Official Methods of Analysis of the Association of Official Analytical Chemists", a copy of which is on file in the offices of the department of agriculture, secretary of state, and revisor of statutes, and which may be obtained from the Association of Official Analytical Chemists, Inc., P.O. Box 540, Benjamin Franklin Station, Washington, DC, 20044.

(b) Each sample to be tested by the Babcock test shall be agitated by the use of a mechanical agitator after the pipetting of the sample in accordance with the AOAC procedure. A mechanical reader, such as a needlepoint divider or other device which accurately determines milkfat level in a test bottle shall be used in reading the Babcock test.

(c) The test may be read to the nearest 0.05% as provided in "Official Methods of Analysis of the Association of Official Analytical Chemists",

if Babcock test bottles graduated to 0.1% or an automated device graduated to 0.1% are used.

(3) **MILKO-TESTER; OR OTHER APPROVED TEST DEVICES.** (a) The ether extraction or Babcock test shall be used as a reference method to maintain the calibration of the Milko-Tester or other approved test devices.

(b) The Milko-Tester or other approved test device shall be calibrated at the beginning of each testing day.

(c) Records of the reference method used and daily cross check results and calibration data shall be maintained on file at the laboratory, and be available for department inspection upon request for a period of one year.

(4) **FRESH MILK TESTING.** Fresh milk samples shall be tested no later than the second day following the day the sample was taken, Saturdays, Sundays and holidays excluded.

(5) **COMPOSITE SAMPLE TESTING.** (a) Butterfat tests of composite milk samples may be made by the ether extraction or Babcock test method. No mechanical device may be used in the test of composite samples without the prior written approval of the department. Approval, if granted, may be limited for use at a specific location.

(b) Composite samples shall be tested within 3 days, Saturdays, Sundays and holidays excluded, after the build-up of the sample has been completed. Time for completion of the test may not be extended without prior written approval of the department.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.

Ag 107.05 Sample retention and retesting. The residue of each composite sample shall be removed from the water bath immediately after each sample has been pipetted. The residue of each sample, both composite and fresh, shall be held intact after testing and kept refrigerated at a temperature between 32 and 40° F. on the premises where tested for a period of not less than 5 days for composite samples and not less than 2 hours for fresh samples. The department may retest such samples on the premises where they were tested or remove them to another laboratory for such purposes. The department shall, upon the written request of the licensed tester or his employer, give notice of the time and location for retesting the plant's samples, providing such request is made at the time the samples are taken by the department for testing. The department may retain such samples for investigative or evidentiary purposes, or return them to the dairy plant operator upon written request.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.

Ag 107.06 Test records. (1) Each licensed tester shall, immediately after testing a sample, record in duplicate, on a form prescribed by the department, the results of such test opposite the name or identification letters or number of the patron whose milk or cream was tested. Such record shall show the date of test and all copies thereof shall be signed by the tester. One copy shall be made available for examination by the department at the dairy plant. All test records shall be kept for a period of not less than one year. No such record of tests may be altered except that errors, if made, shall be corrected by striking through the original entry

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with a line and inserting the correct entry immediately adjacent thereto, along with the initials of the tester making the corrective entry.

(2) When using fresh milk tests for payment to patrons, the arithmetical average of 3 or more butterfat test results shall be used for each 15 day (or 16 day) pay period, or the arithmetical average of 4 or more butterfat test results for a month's pay period.

(3) In averaging butterfat test results, fraction may be figured to the nearest 0.01 %.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.

Ag 107.07 Accuracy of samples and tests. No sampler, tester or other person shall falsely identify milk or milk samples, submit false samples of milk to a dairy plant, make any false record or report concerning a milk sample or its test results, or the quality or quantity of milk, or violate any other provision of these rules.

History: Cr. Register, March, 1976, No. 243, eff. 4-1-76.