



THE GLOBAL STANDARD
FOR LIVESTOCK DATA

ICAR Guidelines for calibration of the milk meters

Afiflo 2000 Milk Meter

Version March, 2018

Network. Guidelines. Certification.

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1 General

- a. The periodic checking will be done at least once in every 12 months.
- b. The testing procedure with water should be carried out with milk meters that are cleaned properly.
- c. Meters should be prepared to the test according to instructions in SAE Afikim's Afiflo 2000 installation Manual, p/n 904139, chapter 9, sections: "Checks before installation" and "Additional checks".

2 Reference value

- a. The reference value is calculated difference in kg between the reading of the milk meter and weighted amount of water which has passed the milk meter.
- b. The "reference value" of the "AFIFLO 2000" milk meter is the average of the two measurements with water, found during the testing procedure with water of the installation test or a reference value determined later.
- c. When proceeding to periodic checking, the reference values are handed over for support.

3 Required equipment

A Fullwood sucking set:


- a. Sucking pipe with a rubber cap and with a sucking opening of 3.5mm, air inlet of 1mm, which provides 7-8 LPM (liter per minute).
- b. Locate a clip tap near the milk meter body (around 10-20 cm).
- c. The same sucking set should be applied in both tests (reference value and periodic checking).
- d. Electric weigh-beam/bascul.
- e. Some buckets of sufficient capacity.
- f. Some receivers for the collecting of testing liquid.
- g. Thermometer.

3.1 Testing liquid

- a. Water with a temperature of $20^{\circ} \text{C} \pm 5^{\circ} \text{C}$.
- b. Addition of around 60 grams of salt per 20kgs of water. The conductivity of the testing liquid should end-up with 12 at the display.

3.2 The principle of the test

- a. Fill a bucket with 20 kg of testing liquid.
- b. Suck a quantity of testing liquid until 12 kg is shown on the display. Stop the water when the milk meter valve is opened.
- c. The flowed - and collected quantity of water will be weighed and recorded.

- d. The testing liquid should provide minimal 10.5 conductivity measured during the test by using the milk meter conductivity (button  or display) and written on the form. If less than 10.5 add more salt (5-10 grams) to around 12 conductivity.

3.3 Quality of the observations/measurements

- a. If the first measurement value deviates 0.1 kg from the reference value: meter is correct.
- b. If the first measurement value deviates more than 0.1kg from the reference value, proceed to a second measurement.
- c. If duplicate measurements have an average deviation of 0.2 kg or less from the reference value: meter is correct.
- d. The difference between duplicate measurements should not exceed 0.1 kg.



Figure 1. The Afiflo 2000 milk meter and the different components.

4 Deviating meters

"When the measurements do not come up to the standard, the testing procedure with water should be repeated after checking the equipment, which may include, among other things, remeasuring the conductivity of the testing liquid, the air flow of the sucking set, tilting of the milk meter body, straightening up, and if necessary, dismantling of the meter. If it is still impossible to come up to the standard, the meter should be calibrated/adjusted or replaced.

5 Replacement or repair of meters

- a. When meters are replaced or when repairs influence the measurement, the meters are to be tested during the milking, after which the testing procedure with water should be carried out twice.
- b. This water test will then serve as "reference value".

6 Reporting the results

The results of the periodic checking of the milk meters, as well as interim changes and the checks that go with these changes will be reported to those concerned, among others to the farmer, to the main supplier and to the national milk recording organisation.

7 Sampling equipment

- a. Check the sampling equipment for cleanness and parts.

See to it that the sampling equipment is stored in a dry place, free from dust.

8 Hints for the sample taker and the farmer for correct sampling

Guide lines from S.A.E. Afikim.

8.1 Before sampling

See to it that:

- a. The meters are cleaned properly.
- b. The air inlet of the claw is opened.
- c. The meter and the sampling equipment are suspended upright.
- d. All equipment for sampling contains no water residues. (Uncarefulness in this matter leads to a too low indication of percentages, especially where the first range of cows is concerned.

8.2 Taking the sample

- a. The display of the meter should always be at zero before starting to milk another cow.
- b. After the cow is off, the sample taker must observe a waiting time before reading off the display and before removing the sample bottles.
- c. This waiting time (about 15 seconds) is necessary for complete discharging of the last portion.
- d. When removing the filled sample bottles, a well-emptied sample bottle should be put in simultaneously.
- e. Then turn over the sample bottle several times transfuse the milk in the mixture bowl and take a sample by means of the sample spoon.
- f. It is to be recommended to use a draining rack for good emptying of bowls and bottles.
- g. It is desirable, that there are some sample bottles extra on the farm during the milk recording. It is strongly advised not to use bottles with colored glass.

8.3 The operational panel

- a. One should press the "start button" twice, shortly one after the other, when the milking set is kicked off and "automatic removal" occur, in order to retain the milk quantity that is already measured.
- b. After taking the meter reading, the meter should be set to zero again.

8.4 After sampling

- a. The farmer removes the bottles and the sample equipment for a careful cleaning by hand.
- b. Store the sample equipment and bottles on a dry place, free from dust.