



Quality Certification Services Inc.

DHI programs start with accurate

For more than 100 years, DHI programs have been based on three principles – cow identification, accurate weights of milk produced and accurate milk component analysis from each cow in the herd. Even though today's DHI programs collect, process and analyze a wide variety of cow data, in addition to milk yield and composition, these same principles are still the foundation of a herd improvement program. Gone are the days of pails and scales, except in certain non-mechanized herds. Rather, DHI programs use a wide variety of International Committee for Animal Recording- (ICAR) approved meters for estimation of individual cow milk yield, providing dairy producers with flexibility to meet test-day needs.

Quality Certification Services Inc. (QCS), a subsidiary of National Dairy Herd Information Association (DHIA), works to ensure that all meters and scales used to estimate milk yield of cows on DHI test are calibrated and serviced as required. These requirements for meter calibration have been established by the Council on Dairy Cattle Breeding, which is the group of Purebred Dairy Cattle Association, National Association of Animal Breeders and DHI representatives that work collectively and cooperatively with Animal Improvement Programs Laboratory (AIPL) on dairy cattle genetic evaluations. The ultimate goal of QCS programs is to provide dairy producers and industry partners with an assurance of accuracy in DHI data that are used for both genetic evaluations and management decisions on dairies.

Many choices for milk recording

While the dairy industry is supported by several milk meter manufacturers, only ICAR-tested and approved milk meters may be used in DHI programs. A complete and current list of approved meters may be found on the QCS web site at: www.quality-certification.com. These meters accurately estimate milk yield and provide a representative milk sample for fat, protein, milk urea nitrogen and somatic cell count analysis, providing dairy producers with an assurance of data accuracy. The meters used in DHI programs generally fall into two categories – portable and on-farm meters. Though the calibration procedures and maintenance may be different for each meter model, all meters have one common requirement; each meter must be calibrated at least once every 12 months.

With nearly 100,000 calibrated portable meters reported in 2011, these meters owned by the 25 certified DHI field providers in the United States are responsible for the majority of herd testing days. These meters, sometimes called “monthly meters,” are brought to the dairy on test day by the field technician. Each field service provider is responsible for the maintenance and calibration of their meters, and reports this to QCS on an annual basis.

Portable or monthly meters are essentially mechanical in operation and provide a volumetric sample of each cow's milk production in a calibrated flask. The milk level in the flask is read by either the DHI technician (supervised test) or milker (unsupervised test), and a subsample for milk analysis is collected. These meters are designed to be added to a milking system without affecting milkout time or negatively affecting udder health, and may be used in any type of milking system.

Meter accuracy

Many dairy producers ask, “How accurate are these meters?” The approved meter models used in DHI programs are initially tested and then calibrated annually to within a 2% tolerance level. The meter center photograph illustrates the many types of portable meters used in DHI programs. Each portable meter in active service is calibrated using an approved water test at one of 39 QCS-certified meter centers in the United States by a QCS-certified meter technician at least once every 12 months. In addition to calibration, these meter technicians examine each meter for proper operation and sampling function (where applicable), and replace worn or aged parts as necessary. These meter centers also provide QCS with the exact calibration weight, test day and technician performing the test for each active meter.

Regardless of the meter's age, a meter with a current calibration sticker or tag is your assurance that the meter will provide an accurate estimate of milk yield on test day. The calibration tag photograph is one example of what a calibration tag may look like on a meter. As a dairy investing in DHI programs, it is your right to ask that the DHI field technician only use certified meters on test day.

Some dairies may elect to own their own portable mechanical meters. As with meters

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milk weights

owned by a DHI service provider, these dairy-owned meters must be calibrated on an annual basis. Most of the certified meter centers in the DHI system offer repair and calibration services to dairies that own their own meters and will report the results of dairy-owned meters to QCS.

Using on-farm meters

While portable meters are the mainstay of today's DHI system, the number of on-farm meters used for test day recording increases every year. These on-farm meters, sometimes referred to as "electronic" or "daily" meters, not only record milk yield for DHI but also provide milk weights between test days for managing the dairy on a daily basis. When linked with on-farm software and a verifiable identification system, DHI programs can simply upload three to 10 milk weight averages for each cow on test day, providing a high level of accuracy. Herds reporting multi-day milk yield averages have a higher data collection rating (DCR) than herds reporting milk weights from a single milking. For more information on DCR, read the articles available at: www.dhia.org/12-07%20National%20DHIA.pdf and www.dhia.org/2-08%20National%20DHIA.pdf.

On-farm meters have differing modes of estimating milk yield, such as probes, flow rate sensors or fill-and-dump behavior. Like portable meters, the accuracy of on-farm meters must be verified at least once every 12 months. The only additional requirement for using on-farm meters in DHI programs is that the sampler must be designed to be used with the meter model (no mismatched models of meters and samplers).

Routinely calibrate meters

As previously mentioned, both portable and on-farm meters are required to be calibrated at least once every 12 months. While certain issues may occur



The DHI system allows use of many types of portable meters in its programs. Portable meters are calibrated using an approved water test at one of 39 U.S. QCS-certified meter centers by a QCS-certified meter technician at least once every 12 months.

that affect timely calibration, failure to perform the required checks will result in "decertification" of a herd. In essence, QCS will notify the dairy records processing center that the meters used by a herd do not meet certification requirements and the flow of data to AIPL will cease. Stopping the flow of data, even if short term, means that cows will not receive genetic evaluations and will not be included in a bull's proof. Non-certified herds are not eligible for young sire program benefits and will not have records sent to respective breed associations for inclusion on pedigrees or other breed recognition programs. Equally as important, there is no assurance that management decisions related to cow performance or milk quality on the dairy will be based on quality data.

To continue moving the U.S. dairy industry forward, century-old principles still hold firm: accurate cow identification, accurate milk weights and accurate milk components analysis. QCS assures that the meters and scales

used for DHI testing are calibrated and serviced routinely. Accurately calibrated milk testing equipment help provide dairy producers with accurate data to manage individual cows and their dairy enterprises. Additionally, accurate data will enhance the U.S. dairy industry's progress and sustainability.



A calibration tag, such as this one, attached to a milk meter is your assurance that the meter will provide an accurate estimate of milk yield on test day.