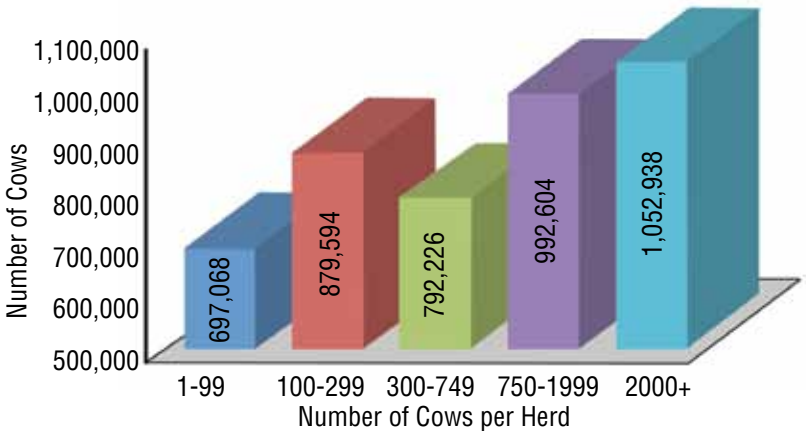
On-farm electronic meters and

The milking systems on today's dairies continue to evolve and reflect the investment in milking systems with on-farm data collection and management systems. Parallel to this change, today's DHI programs have the tools to efficiently move cow data from producer-owned systems. Of the 4.4 million cows that participated in 2011 DHI programs, more than 2 million were in herds larger than 750 cows (see Figure 1). While not exclusive to these larger herds, there has been a marked increase in the use of dairy-owned electronic milk meters in DHI programs.

Figure 1. DHI Cows by Herd Size During 2011



The use of on-farm meters in Labor Efficient Records (LER), which is not new to the DHI system, provides dairies with the opportunity to upload 5-day, 7-day or 10-day milk weight averages to their Dairy Records Processing Center (DRPC). Using LER programs allows a dairy to select a milk sampling interval (monthly, bimonthly or quarterly) that meets the herd's needs. LER testing through DHI is focused on maximizing the dairy's investment in milking equipment and data collection, and provides an alternative to traditional DHI herd testing with DHI-owned portable meters. Furthermore, the use of producer-owned meters minimizes changes to the milking system setup and has less interference with normal routines on herd testing day. Data from LER herds receive a higher Data Collection Rating (DCR), compared with herds on traditional testing programs, for genetic and management research at Animal Improvement Programs Laboratory (AIPL).

Accurate information is key

Whether using cow data for daily management decisions, genetic evaluations or management research by AIPL, accurate cow data are vital. Quality Certification Services Inc. (QCS), a subsidiary of National DHIA, certifies that all producer-owned meters are a model approved by the International Committee for Animal Recording (ICAR). Additionally, the certification assures that milk yield data are accurate and reliable. In 2011, QCS certified more than 90,000 producer-owned meters.

While all electronic meters installed on a dairy are factory calibrated, their accuracy must be checked annually to be used in DHI programs. Two calibration options exist for electronic meters owned by a dairy – traditional water-test calibration by the dealer or a statistical evaluation of meter performance through various software programs. An annual water-test calibration can be time prohibitive in today's modern milking parlors, but it does provide the required check of the meter's accuracy and usually involves periodic maintenance and replacement of worn or malfunctioning components. On the other hand, a yearly calibration does not provide the dairy with ongoing monitoring of the milking system or meter performance between these checks.

What is an electronic meter performance report?

Of the 90,000-plus certified electronic meters in the DHI system, approximately 46% achieved their certification through the use of an electronic meter or parlor performance report in 2011. This report compares the expected and actual milk weights

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DHI programs work in harmony

of each cow at each milking, adjusts for herd effects and provides an estimate of each stall or milk meter's performance over the previous 10 milkings.

While these reports do not specifically identify if a meter is operating within tolerance, they do provide the dairy and DHI personnel with an assurance that the entire milk recording system has a level of accuracy. As illustrated in Figure 2, there are five key components to the milk weight recording system. A malfunction or error in one or more of these components may contribute to a significant deviation at a stall in the parlor.

Compared to an annual water-test calibration, the electronic meter performance report offers advantages to both the dairy and DHI program. These include:

- Reports can be run frequently (daily, monthly, etc.)
- Easy access by dairy and DHI personnel
- Target repair costs – identify the right meter, controller, software or electronic ID reader
- Reliable estimate of daily milk weight accuracy for management decisions

Currently, these reports are available with the manufacturer's software (DairyPlan, Provantage) and third-party software programs (DairyComp 305, PCDart). Working with ICAR, QCS has been instrumental in developing standards for parlor reports that can be adopted by all milking equipment manufacturers and other dairy herd management software programs in the future.

Communication is necessary

While it has been said many times that communication is the key to successful management, in the case of dairy-owned electronic meters, communication takes on a whole new meaning. Today's DHI, through the investment of resources by our partner DRPCs, has developed reliable interfaces with both manufacturers' software (e.g. Afifarm, Alpro, etc.) and other software programs to move cow data seamlessly into the DHI system and back to dairies. These interfaces are continually monitored, as well as updated when advances or revisions to other software programs enter the marketplace.

Whether you milk 40 cows in a tie-stall barn or have multiple parlors at multiple sites, there is a DHI testing program that meets your needs.

While each dairy is unique and has software preferences, DHI field personnel have access to the tools needed to work with almost any on-farm system. This streamlined communication between on-farm software programs allows for efficient and virtually error-free processing, coupled with timely turnaround of DHI information back to the dairy management team.

The DHI system's flexibility to meet the needs of any size dairy is greater than ever. Whether you milk 40 cows in a tie-stall barn or have multiple parlors at multiple sites, there is a DHI testing program that meets your needs. Few limitations currently exist for moving data from on-farm software into the DHI system or customizing a herd testing plan that meets each dairy's specific needs. Using approved dairy-owned meters in LER programs is easy and provides both alternative herd testing and reliable results for herd management decisions and genetic and management research.

Figure 2. Key components of the milk weight record system