

Measuring and Managing Using DHI Records

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An often heard expression about management in dairy circles is that “if you don’t measure it you can’t manage it”. The truth in the expression is that the performance of dairy herds is critical to their successful management as businesses and that performance must be measured to enable more effective management. The Dairy Herd Improvement (DHI) program was developed in Michigan in 1905 and began with the recording of milk production of dairy cows. Dairy herds back then, as do dairy herds today, produce and sell milk. How much milk is produced and of what quality it is are affected by other aspects of performance of the dairy herd which are also measured in DHI records.

Many dairy herds have their cows calving from late summer through to the end of the year. It is timely then to focus on milk production levels and reproduction of the herd. Peak milk yield is a very good indicator of total lactation milk production and should be reached at about 6 to 8 weeks in lactation after calving. Total lactation milk yield is expected to be 200 to 250 times peak daily milk yield. Peak and summit milk yields of first lactation, second lactation and third and later lactation cows are summarized in DHI records. If peak milk yields are not satisfactory or if decline in milk yield is too rapid after peak, most likely the transition cow program from drying off in the previous lactation through to the early part of the succeeding lactation needs to be examined for making improvements. Also, peak milk yields should increase as cows get older. Peak milk yields of second lactation cows should be 12 to 20 pounds higher than those of first lactation cows. The peak yields of 3+ lactation cows should jump another 5 pounds over second lactation cows.

To maintain stable or increasing production of milk by the dairy herd over time, cows should reproduce at a regular interval of 13 to 14 months. DHI records of calving dates, estruses observed, and tabulation and listing of expected upcoming heats can be utilized to facilitate more efficient reproduction. Tracking cows bred but not yet pregnant and the length of service interval can provide indicators of deficiencies in estrus detection program. The use of the DHI records can contribute directly to the management of reproduction of the dairy herd.

Measurement of somatic cell count level or score in the milk of individual cows can indicate the likelihood of udder infections. Higher levels of somatic cell count are associated with reduced milk production – from 3 pounds of milk per day at a cell count of 200,000 to 6 pounds at a cell count of 800,000. DHI records give a listing of the cows with the highest somatic cell count levels and based on their milk yield and cell count the proportion of cells in the estimated total milk from the herd for which they are responsible. Such high cell count cows may need to be evaluated relative to lost milk income if they are sold versus higher herd milk income from qualifying for milk quality bonuses. As well, the estimated cell count is given for herd milk yield when these high cell count cows are not included. An estimate is also provided of the level of lost milk production for the herd and the value of that milk which was not produced and harvested.

The genetic merit of AI sires whose semen is used in inseminating cows contributes one half of the genetic merit of the potential heifers which could result from these matings.

The genetic merit of these service sires is summarized in the DHI records. Based on current levels of genetic merit of AI sires, choosing AI sires ranking in the top 20% or 80th percentile over those in the top 60% or 40th percentile is expected to result in daughters with an additional \$157 of Lifetime Net Merit. DHI records track the genetic merit of females in the herd and their sires as well as the genetic merit of sires used to breed the cows.

The use of DHI records can play a direct role in the management decisions made on the dairy farm and in the tasks carried out as a result of those decisions.