



## Selection for Milking Temperament

Canadian milk recording agencies have been collecting data on the temperament of first lactation cows at milking time for several years. More recently, producer concerns have risen regarding the importance of this trait in their day to day herd management, especially the problems associated with cows which are quite nervous while being milked or during other regular activities which require the handling of animals. Developments at Canadian Dairy Network have now advanced to the point whereby official bull proofs reflecting the milking temperament of their daughters will soon be a reality in Canada.

### Milking Temperament Data

Milk recording staff request herd owners to provide a subjective appraisal of the relative temperament of each cow which is normally provided during the first six months of their first lactation. The producer indicates whether the cow is either "Very Nervous", "Nervous", "Average", "Calm" or "Very Calm" which is simply recorded on a 5-point numerical scale. Although this recording system became nationwide in 1999, when Vision 2000 was implemented by milk recording agencies, it was already used by most provinces for several years previously. All available data on milking temperament has recently been processed at Canadian Dairy Network and loaded into its database for all dairy breeds. Table 1 provides the number of records available for genetic evaluation purposes, which dates back over 7 years, and an approximate number of new records expected per year.

<b>Breed</b>	<b>Number for Genetic Evaluations</b>	<b>Approximate Annual Increase</b>
Ayrshire	24,978	3,000
Brown Swiss	3,252	400
Canadienne	510	80
Guernsey	2,584	200
<b>Holstein</b>	<b>658,670</b>	<b>80,000</b>
Jersey	16,079	1,500
Milking Shorthorn	542	80

In addition to the total number of records available for inclusion in genetic evaluations, it is also interesting to examine the distribution of the cows within each of the appraisal scores for milking temperament, which are presented in Table 2.

<b>Table 2: Distribution of Milking Temperament Appraisals by Breed</b>					
<b>Breed</b>	<b>Percentage of Cows</b>				
	<b>Very Nervous (1)</b>	<b>Nervous (2)</b>	<b>Average (3)</b>	<b>Calm (4)</b>	<b>Very Calm (5)</b>
Ayrshire	0.9	9.1	41.8	45.5	2.7
Brown Swiss	1.0	9.0	42.5	42.4	5.1
Canadienne	0.3	10.8	41.4	47.1	0.3
Guernsey	1.1	10.3	48.6	33.6	6.3
<b>Holstein</b>	<b>1.0</b>	<b>8.9</b>	<b>49.3</b>	<b>37.1</b>	<b>3.8</b>
Jersey	1.1	7.4	44.8	41.0	5.7
Milking Shorthorn	0.9	4.8	51.9	34.3	8.1
	<b>Combined: 9.8%</b>		<b>Combined: 90.2%</b>		

### Expression of Bull Proofs

Researchers at Canadian Dairy Network have recently developed a genetic evaluation system for computing bull proofs for 'Milking Temperament'. The appraisal for each cow on the 5-point scale is first adjusted for various non-genetic factors including the age of the cow at calving, the season of calving, the number of days in milk when the milking temperament appraisal was given by the herd owner and the average level of the herd for milking temperament within each year. All known pedigree information for cows and bulls is included for the calculation of each sire's proof.

To maintain consistency with the expression of bull proofs for other auxiliary traits in Canada, such as milking speed and calving ease, bull proofs have been expressed in terms of *the percentage of future daughters which are expected to be "Average", "Calm" or "Very Calm" for milking temperament during their first lactation*. As seen in Table 2, the population average across all breeds for the percentage of cows evaluated as "Average or better" is essentially 90% so the published bull proofs for each breed are expressed compared to this average. Generally, the range in proofs for Milking Temperament is from a low of close to 70% to a high of 97%, which is the most desirable.

Table 3 provides the Milking Temperament proof for selected well-known sires in Canada, based on the pilot proof run recently completed at Canadian Dairy Network for industry review and feedback.

<b>Table 3: Milking Temperament Pilot Proofs for Selected<sup>(1)</sup> Holstein Sires</b>				
<b>Name</b>	<b>Daughters</b>	<b>Herds</b>	<b>Reliability</b>	<b>Milking Temperament(2) (Avg. = 90%)</b>
<i>Oliveholme Aeroline</i>	3,878	2,154	99%	89%
<i>Madawaska Aerostar</i>	13,445	4,686	99%	88%
<i>Duregal Astre Starbuck</i>	25,659	6,052	99%	92%
<i>Hanover-Hill Inspiration</i>	6,778	2,623	99%	93%
<i>Second-Look Jolt</i>	568	324	96%	86%
<i>Comestar Leader</i>	5,210	2,645	99%	91%
<i>Comestar Lee</i>	1,640	1,144	98%	88%
<i>Hanoverhill Lieutenant</i>	7,283	3,463	99%	83%
<i>A Townson Lindy</i>	18,470	5,223	99%	94%
<i>Shoremarr Mason</i>	9,789	4,184	99%	95%
<i>A Ronnybrook Prelude</i>	13,137	3,696	99%	90%
<i>Startmore Rudolph</i>	11,528	3,829	99%	92%
<i>Hanoverhill Starbuck</i>	3,510	1,645	99%	92%
<i>Maughlin Storm</i>	10,179	4,125	99%	91%
<i>Combination Supersire</i>	5,614	2,894	99%	94%
<p>Note (1) Includes bulls in Top 40 LPI with at least 500 daughters in their Milking Temperament proof as well as bulls with over 5,000 daughters for Milking Temperament and were popular sires of sons in Canada.</p> <p>(2) Bull proofs are expressed as the percentage of future daughters expected to be "Average", "Calm" or "Very Calm" for milking temperament during their first lactation.</p>				

### **Official Implementation**

The pilot bull proofs calculated at Canadian Dairy Network are the first results of the proposed national genetic evaluation system for Milking Temperament. Prior to official implementation and publication of bull proofs for this trait, these pilot proofs are provided for review and feedback from producers and staff working for industry organizations. The current intent is to include bull proofs for Milking Temperament for official publication starting with the August 2001 genetic evaluation release.