

## Pin Setting and Set of Rear Legs: Termination of Publication

The conformation assessment program in Canada has included Rump Angle and Rear Legs Side View in all breeds for over 30 years. These traits are assessed by classifiers using a linear scale from 1 to 9 whereby an intermediate score of 5 or 6 is ideal for Rump Angle and 5 is ideal for Rear Legs Side View (see relevant sections from the Conformation Analysis sheet for Holsteins below).

<b>Rump</b> (10%)	<b>Rump Angle</b> (23%)	high	1 2 3 4 5 6 7 8 9	low	<b>10</b> Advanced Anus <sub>2.5</sub>	<b>13</b> High Tailhead <sub>0.5</sub>
	Pin Width (21%)	narrow	1 2 3 4 5 6 7 8 9	wide	<b>11</b> Advanced Tailhead <sub>1.5</sub>	<b>14</b> Wry Tail <sub>1</sub>
	Loin Strength (32%)	weak	1 2 3 4 5 6 7 8 9	strong	<b>12</b> Recessed Tailhead <sub>1</sub>	
	Thurl Placement (24%)	back	1 2 3 4 5 6 7 8 9	ahead		

<b>Feet &amp; Legs</b> (28%)	<b>Foot Angle</b> (9%)	low	1 2 3 4 5 6 7 8 9	steep	<b>30</b> Abnormal Claw <sub>1.5</sub>	<b>35</b> Rear Legs Back <sub>1.5</sub>
	Heel Depth (22%)	shallow	1 2 3 4 5 6 7 8 9	deep	<b>31</b> Weak Pasterns <sub>1.5</sub>	<b>36</b> Toes Out Front <sub>1.5</sub>
	Bone Quality (10%)	coarse	1 2 3 4 5 6 7 8 9	flat	<b>32</b> Boggy Hocks <sub>1</sub>	
	<b>Rear Legs-Side View</b> (14%)	straight	1 2 3 4 5 6 7 8 9	curved	<b>33</b> Lacks Bone <sub>1</sub>	
	Rear Legs-Rear View (31%)	hocked-in	1 2 3 4 5 6 7 8 9	straight	<b>34</b> Crampy <sub>1st Lact=4, 2nd=3, 3rd=2 (off of FS)</sub>	
	Locomotion (research) Thurl Placement (14%)	non-mobile	1 2 3 4 5 6 7 8 9	mobile		

Given the manner in which these traits are assessed, genetic evaluations are expressed using letter designations to reflect the expected outcome of an animal's progeny, on average. For Rump Angle, genetic evaluation values other than zero include the letters of either "H" to reflect a tendency towards high pins or "L" for a tendency toward low pins. Letters for Rear Legs Side View are "S" for a tendency toward straight legs or "C" for curved legs. Sires with a proof of zero are expected to produce more daughters with the ideal score for these traits.

Accompanying the publication of Rump Angle and Rear Legs Side View, CDN has also used the same classification data to publish genetic evaluations for analogous traits, Pin Setting and Set of Rear Legs, respectively. These traits have been published by CDN to facilitate the interpretation of evaluations by producers using a "desirability" scale whereby higher values towards +15 reflected sires that were most likely to produce daughters with the ideal/desired rump angle and rear legs when viewed from the side. At its most recent meeting in May 2016, the CDN Board of Directors approved the recommendation from its advisory committee, the Genetic Evaluation Board (GEB), to cease the publication of evaluations for Pin Setting and Set of Rear Legs effective the genetic evaluation release in August 2016. The main reasons for this decision include:

- The publication of two sets of evaluations for essentially the same trait has not been well understood by producers and industry personnel
- These traits, expressed on the "desirability" scale have the lowest values of estimated heritability among all conformation traits, ranging from 2 to 7%, and are significantly lower than heritability values for the analogous traits of Rump Angle and Rear Legs Side View.
- Internationally, most other countries publish genetic evaluations for Rump Angle and Rear Legs Side View, which are included in the MACE evaluation services offered by Interbull. Canada is the only country worldwide that has also published Pin Setting and Set of Rear Legs using the "desirability" scale.
- With the arrival of genomic evaluations, observed gains in accuracy of prediction have been among the poorest for Pin Setting and Set of Rear Legs, reducing the value of these traits in current selection strategies.

To carry out the approved action and terminate the publication of genetic evaluations for Pin Setting and Set of Rear Legs, CDN has established the following implementation plan:

- Data files associated with the August 2016 genetic evaluation release will no longer have actual values in fields associated with these two traits. All such data fields will contain default values, which will be -99 for the actual genetic evaluation for all animals.
- File formats for the December 2016 genetic evaluation release will be modified by excluding all data fields associated with Pin Setting and Set of Rear Legs. The new file formats will also be modified to include data fields associated with the new Metabolic Disease Resistance (MDR) index, which will be introduced at that time for the Holstein, Ayrshire and Jersey breeds.
- The CDN web site has been changed, effective immediately, to no longer display the genetic evaluations for these two conformation traits. This affects each animal's Genetic Evaluation Summary page as well as the Type Evaluation Details page for proven sires in Canada.
- Industry partner web sites are also welcome to cease displaying evaluations for Pin Setting and Set of Rear Legs, when convenient in advance or at the time of the August 2016 release.
- AI organizations are expected to exclude these traits from any proof sheets or other promotional materials, as well as genetic mating programs, effective August 2016, if not already excluded.

As genetic evaluation services offered by CDN continue to expand by adding new traits, it is also important to review the value of existing traits from time to time. The decision to terminate the publication of Pin Setting and Set of Rear Legs is an outcome of such a review without reducing the value of the conformation assessment program in Canada that includes Rump Angle and Rear Legs Side View.

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