

DESCRIPTION OF NATIONAL GENETIC EVALUATION SYSTEMS

Country (or countries)	NZL
Main trait group¹	Calving Difficulty
Breed(s)	BSW, GUE, HOL, RDC
Trait definition(s) and unit(s) of measurement² Attach an appendix if needed	1) Assistance for calves born to heifers 2) Assistance for calves born to cows 3) Gestation Length Calving Difficulty is treated as a binary trait, either the calving was difficult or it was not difficult.
Method of measuring and collecting data	Farmer recorded scores for calving difficulty 0) Not reported 1) Reported no assistance 2) Minor assistance given 3) Major assistance Mating and calving dated recorded on the national database.
Time period for data inclusion	For seasons 1994-1996, data is from progeny test herds and herds nominated by Holstein-Friesian Association only. From 1997 onwards, calving assistance data collected from national population.
Age groups (e.g. parities) included	2-7 years
Other criteria (data edits) for inclusion of records	Gestation Length Twins excluded Termination code is not premature, induced or aborted Comment code is not malpresentation or breech Calvings at least 240 days apart
Criteria for extension of records (if applicable)	Not applicable
Sire categories	All bulls including domestic and foreign AI bulls plus natural service herd sires
Environmental effects³, pre-adjustments	Not applicable
Method (model) of genetic evaluation³	MT-ML-BLUP-AM
Environmental effects³ in the genetic evaluation model	F: HYS; sex of calf; breed heterozygosity
Adjustment for heterogeneous variance in evaluation model	Not applicable
Use of genetic groups and relationships	
Blending of foreign/Interbull information in evaluation	Not applicable for test evaluation
Genetic parameters in the evaluation	h ² Calving Difficulty in heifers 0.045 h ² Calving Difficulty in cows 0.030 h ² Gestation Length 0.522
System validation	Interbull trend validation test III

Expression of genetic evaluations	Evaluation is expressed as EBV for the percentage of assisted calvings expected when a sire is mated to yearling heifers.
Definition of genetic reference base	2000 born cows of all breeds and crosses with records for each of milk, fat, protein and 17 traits other than production in 2002.
Next base change	June 2016
Calculation of reliability	Information source method. Harris, B.L. and Johnson, D.L.. (1998) Approximate reliabilities of genetic evaluations under an animal model; <i>J Dairy Sci</i> 81 :2723-2728;
Criteria for official publication of evaluations	Official for bulls enrolled for the evaluation system
Number of evaluations / publications per year	3 – February, May and November
Use in total merit index⁴	Not used in national index.
Anticipated changes in the near future	Not applicable
Key reference on methodology applied	Winkelman et al. 2010. Enhancement of calving difficulty breeding values in New Zealand breeding. <i>Interbull Bulletin</i> 42 : 91-94
Key organisation: name, address, phone, fax, e-mail, web site	DairyNZ Jeremy Bryant Private Bag 3016 Hamilton NEW ZEALAND Phone: +64 (0)21 814 163 jeremy.bryant@dairynz.co.nz Website: http://www.dairynz.co.nz/animal/animal-evaluation/

1) Either: Production (e.g. milk, fat, protein), Conformation, Health (e.g. mastitis resistance, milk somatic cell, resistance to diseases other than mastitis), Longevity, Calving (e.g. stillbirth, calving ease), Female fertility (e.g. non-return rate, interval between reproductive events, number of AI's, heat strength), Workability (e.g. milking speed, temperament), Beef production, Efficiency (e.g. body weight, energy balance, body conditioning score), or Other traits.

2) Indicate frequencies per category if the trait is categorical and specify transformation of data if practiced.

3) Use abbreviations for most common effects (see document with list of abbreviations at http://www-interbull.slu.se/service_documentation/General/list_of_abbreviations.rtf) and indicate random (R) or fixed (F).

4) Please give economic weights and indicate how they are expressed (preferably in genetic standard deviation units).

Parameters for national genetic evaluations for calving traits as provided to Interbull

Country (or countries):

Main trait group: Calving Traits

Breed(s):

Trait	h^2	genetic variance	official proof standardisation formula ^a
Direct calving ease:	0.045	36.089	
Maternal calving ease:			
Direct stillbirth:			
Maternal stillbirth:			

^a Expressed as follows:

StandEval=((eval-a)/b)*c+d where a=mean of the base adjustment, b=standard deviation of the base, c=standard deviation of expression (include sign if scale is reversed), and d=base of expression.