Country	Norway

Trait category:	*Individual trait(s):*
Reproduction-calving	**Calving performance (direct, maternal)**
	Stillbirth (direct, maternal)
Reproduction-fertility	**Non-return rate 60 (female)**
Health	**Mastitis**
	Ketosis
Workability	**Milking speed**
	Leakage
	Temperament
Conformation	**Udder**
	Locomotion
	Overall

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NORWAY

Reproduction calving traits	Calving performance (direct, maternal) Stillbirth (direct, maternal)
Breed(s)	Norwegian Cattle
Trait definition and unit(s) of measuring	Calving performance is scored in 3 categories; easy calving (1), little assistance (2), difficult calving (3) Stillbirth is scored in 2 categories; born alive (0), stillborn or dead within 24 hours (1)
Method of measuring and collecting data	Scored by farmer and collected by technicians in the recording system
Time period for data inclusion	Data from one year
Age groups	1st calvers
Genetic parameters	$h^2_{\text{calving performance (direct)}} = 0.05$ $h^2_{\text{calving performance (maternal)}} = 0.05$ $h^2_{\text{stillbirth (direct)}} = 0.05$ $h^2_{\text{stillbirth (maternal)}} = 0.05$
Sire categories	Test bulls
Environmental effects **pre-adjustment** **evaluation model**	 None Age, herd, month of calving
Base for age adjustment	None
Use of genetic groups and/or relationships	None
Method (model) of genetic evaluation	ST BLUP SM
System validation	All data have to have " acceptable" values
Expression of proof	RBV with M = 100 and SD = 7, higher values are more desirable
Genetic (reference) base	None
Criteria for official publication of sire proofs	≥ 200 daughters
Number of evaluations/ publications per year	One; June
Use in total merit index	0.12 x fertility + 0.08 x calving performance + 0.20 x mastitis / ketosis + 0.05 x milking speed + 0.09 x leakage + 0.5 x feet & legs + 0.05 x temperament + 0.04 x body conformation traits [+ 0.11 x carcass value + 0.19 x kg protein]
Key reference on methodology applied	Fimland, E., 1984. Progeny testing procedures in Norway. IDF/EAAP Symp. on progeny testing methods in dairy cattle. Prague, Sept. 14-16 IDF Doc. 183, 117-132.

Reproduction fertility traits	Non-return rate 60 (female)
Breed(s)	Norwegian Cattle
Trait definition and unit(s) of measuring	Re-inseminated (0) or not re-inseminated (1) within 60 days after first insemination
Method of measuring and collecting data	Calculated from AI-data
Time period for data inclusion	Data from one year
Age groups	Virgin heifers
Genetic parameters	$h^2_{\text{non return rate 60 (female)}} = 0.05$
Sire categories	Test bulls
Environmental effects pre-adjustment evaluation model	None Age, month of lactation, technician
Base for age adjustment	None
Use of genetic groups and/or relationships	None
Method (model) of genetic evaluation	ST BLUP SM
System validation	All data have to have " acceptable" values
Expression of proof	RBV with M = 100 and SD = 7, higher values are more desirable
Genetic (reference) base	None
Criteria for official publication of sire proofs	≥ 200 daughters
Number of evaluations/ publications per year	One; June
Use in total merit index	Included, see page 114
Key reference on methodology applied	Fimland, E., 1984. Progeny testing procedures in Norway. IDF/EAAP Symp. on progeny testing methods in dairy cattle. Prague, Sept. 14-16 IDF Doc. 183, 117-132.

Health traits	Mastitis Ketosis
Breed(s)	Norwegian Cattle
Trait definition and unit(s) of measuring	Treatment for mastitis scored in 2 categories; no treatment (0), one or more treatments (1) Treatment for ketosis scored in 2 categories; no treatment (0), one or more treatments (1)
Method of measuring and collecting data	Collected by milk or herd recording system
Time period for data inclusion	Last two years
Age groups	1st and 2nd lactation
Genetic parameters	$h^2_{mastitis} = 0.03$ $h^2_{ketosis} = 0.03$
Sire categories	Test bulls
Environmental effects **pre-adjustment** **evaluation model**	 None Age, month of lactation, culled or not, herd, season
Base for age adjustment	None
Use of genetic groups and/or relationships	None
Method (model) of genetic evaluation	ST BLUP SM
System validation	All data have to have " acceptable" values
Expression of proof	RBV with M = 100 and SD = 7, higher values are more desirable
Genetic (reference) base	None
Criteria for official publication of sire proofs	≥ 200 daughters
Number of evaluations/ publications per year	One; June
Use in total merit index	Included, see page 114
Key reference on methodology applied	Fimland, E., 1984. Progeny testing procedures in Norway. IDF/EAAP Symp. on progeny testing methods in dairy cattle. Prague, Sept. 14-16 IDF Doc. 183, 117-132.

Workability traits	Milking speed Leakage Temperament
Breed(s)	Norwegian Cattle
Trait definition and unit(s) of measuring	Milking speed is scored from fast (1) to slow (3) Leakage is dripping of milk before milking is scored from no leakage (1) to considerable leakage (3) Temperament is scored from easy (1) to difficult to handle (3)
Method of measuring and collecting data	Scored by farmer collected by technicians in the milk recording system
Time period for data inclusion	Data from one year
Age groups	1st lactation
Genetic parameters	$h^2_{\text{milking speed}} = 0.20$ $h^2_{\text{leakage}} = 0.10$ $h^2_{\text{temperament}} = 0.05$
Sire categories	Test bulls
Environmental effects **pre-adjustment** **evaluation model**	 None Age, month of calving, herd, season
Base for age adjustment	None
Use of genetic groups and/or relationships	None
Method (model) of genetic evaluation	ST BLUP SM
System validation	All data have to have " acceptable" values
Expression of proof	RBV with M = 100 and SD = 7, higher values are more desirable
Genetic (reference) base	None
Criteria for official publication of sire proofs	≥ 200 daughters
Number of evaluations/ publications per year	One; June
Use in total merit index	Included, see page 114
Key reference on methodology applied	Fimland, E., 1984. Progeny testing procedures in Norway. IDF/EAAP Symp. on progeny testing methods in dairy cattle. Prague, Sept. 14-16 IDF Doc. 183, 117-132.

Conformation traits	Udder Locomotion Other
Breed(s)	Norwegian Cattle
Trait definition and unit(s) of measuring	Linear scored on a linear 1-3 point scale
Method of measuring and collecting data	Scored by field technicians
Time period for data inclusion	Data from one year
Age groups	1st lactation
Genetic parameters	$h^2_{\text{udder traits}} = 0.15$ $h^2_{\text{locomotion traits}} = 0.20$ $h^2_{\text{other traits}} = 0.15$
Sire categories	Test bulls
Environmental effects **pre-adjustment** **evaluation model**	 None Age, month of calving, herd, season
Base for age adjustment	None
Use of genetic groups and/or relationships	None
Method (model) of genetic evaluation	ST BLUP SM
System validation	All data have to have " acceptable" values
Expression of proof	RBV with M = 100 and SD = 7 A udder and feet & legs index available
Genetic (reference) base	None
Criteria for official publication of sire proofs	≥ 10 daughters
Number of evaluations/ publications per year	One; June
Use in total merit index	Included, see page 114
Key reference on methodology applied	Fimland, E., 1984. Progeny testing procedures in Norway. IDF/EAAP Symp. on progeny testing methods in dairy cattle. Prague, Sept. 14-16 IDF Doc. 183, 117-132.