

# FACTS ON SIRE EVALUATION PROCEDURES APPLIED FOR NON-PRODUCTION TRAITS

## COUNTRY: FINLAND

Trait(s):	<u>REPRODUCTION</u> a) Female fertility b) Male fertility c) Calving performance <u>HEALTH</u> d) Somatic cell count e) Mastitis and fertility treatments <u>MILKABILITY</u> f) Milkability g) Udder conformation <u>LOCOMOTION</u> h) Feet and legs <u>OTHER</u> i) Temperament
Breed(s):	Finnish Ayrshire, Finnish Friesian, Finncattle
Trait definition and unit(s) of measurement	a) Days open (DO) b) 60 days non-return rate c) Stillbirths, no. of dead calves within 24 hours d) Lactation averages of natural logarithms of somatic cell count e) Frequency of fertility, and mastitis treatments and total number of treatments f) Subjective milkability g) Udder shape and attachment h) Rear legs side view, foot angle i) Subjective temperament
Method of measuring and collecting data	a) Days open for animals that have at least two calvings b) 500 first inseminations c) Calvings of live cows with max 4 calvings d) Measured for every second milk test e) Measured from three lactations g,h) Classification by special classifiers (1 to 9) f) Classification by AI-technicians (1 to 5) i) Classification by AI-technicians (1 to 3)
Time period for data inclusion	a,d) 1978 onwards b) 5 last years e) 1983 onwards
Age groups considered	-
Genetic parameters assumed	$h^2$ : a) 0.05, $t=0.135$ ; b) 0.28; c) 0.03; d) 0.21, $t=0.43$ ; f,i) 0.15; g,h) 0.4; e) Fertility and Mastitis treatments $h^2$ : 0.03, $t$ : 0.06; Total treatments $h^2$ : 0.08, $t$ : 0.16
Sire categories evaluated	a-e) All sires; f-i) Only young bulls

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Environmental effects considered by pre-adjustment	<ul style="list-style-type: none"> <li>b) AI-station, month</li> <li>c) Sex of calf, calving month, no of calving, age at calving (for 1<sup>st</sup> calvers)</li> <li>d) Lactation number and days in milk</li> <li>e) Year, season, number of calving and herd</li> <li>f,i) AI-technician (and leakage for milkability)</li> <li>g) Lactation number, month of calving, classifier, test milk, time from milking</li> <li>h) Lactation number, classifier</li> </ul>
by evaluation model	<ul style="list-style-type: none"> <li>a) Herd-year, lactation number, month, PE</li> <li>c,f-i) Breed</li> <li>d) Herd-year, age at calving within lactation number, month, PE</li> </ul>
Base for age adjustment	-
Use of genetic groups and/or relationship	a,d) Full relationship matrix. Groups are assigned to animals with unknown parents according to the breed, sex and birth year of the animal
Method of evaluation	<ul style="list-style-type: none"> <li>a,d) ST BLUP AM</li> <li>b) Corrected mean</li> <li>c,f-i) CC</li> <li>e) Modified direct updating</li> </ul>
Expression of proof	Standardized with mean=100 and SD=10 a,d) EBV; c,e,f-i) ETA
Genetic (reference) base	<ul style="list-style-type: none"> <li>a,d,e,f-i) Rolling, average of three latest batches of young bulls 1990: 82-83-84</li> <li>b) Average of all bulls in evaluation</li> <li>c) Average of live cows with max 4 calvings</li> </ul>
Criteria for official publication of sire proofs	<ul style="list-style-type: none"> <li>a,d,e) Minimum of 20 daughters</li> <li>b) All bulls with at least 500 inseminations</li> <li>c) Minimum of 100 observations/bull</li> <li>f-i) Minimum of 10 daughters</li> </ul>
Number of evaluations/publications per year	Twice a year
Use in total merit index	<ul style="list-style-type: none"> <li>a) Fertility index (FI) is used in total merit index of bulls with weight 0.3. <math>FI = (2 \cdot DO + 1 \cdot \text{Fertility Treatments}) / 3</math></li> <li>b,g,i) Used with weight 0.05</li> <li>c) Used with weight 0.025</li> <li>d) Combined udder health index with somatic cell count and mastitis treatments is used with weight 0.3</li> <li>e) Total no of treatments is used with weight 0.05</li> <li>f) Used with weight 0.1</li> <li>h) Not used in total merit index</li> </ul>

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Name, address and faxnumber of organization responsible for sire evaluation and publication	The Finnish Animal Breeding Association P.O. Box 40, SF-01301 Vantaa, Finland Fax: +358 0 833949
Key references on methodology applied	Mäntysaari E.A. and I. Strandén, 1991. Animal model evaluation for production traits in Finnish Dairy Cattle. 42 <sup>nd</sup> Annual meeting of EAAP, Berlin.