### Facts on Sire Evaluation Procedures Applied for Non-Production Traits

#### Country: Denmark

| Sire categories evaluated | a-e) All AI sires  
|                          | d,e) All sires  
|                          | f-j) All but only 1st batch of daughters  
| Environmental effects considered by pre-adjustment | a) Parity, season, AI-society  
| by evaluation model | b) Age of cow, sex of calf, year, season, herd, breed  
|                          | d,e) Herd, Year-Season, Calving age  
|                          | f-j) Season-Year, age at calving, months from calving, classifier, breed  
| Base for age adjustment | Jersey 26 months, Other breeds 28 months  
| Use of genetic groups and/or relationship | a,c) No  
|                          | b) Groups of proven and young sires  
|                          | d,e) Relationship among bulls  
|                          | f-j) Sire, maternal grand sire.  
| Method of evaluation | a,c) CC  
|                          | b) ST BLUP SM  
|                          | d,e) MT BLUP SM  
|                          | f-j) BLUP AM  
| Expression of proof | a-e) RBV  
|                          | f-j) EBV, standardized with mean = 0 and SD = 1  
| Genetic (reference) base | Rolling average of bulls tested within the last year  
| Criteria for official publication of sire proofs | a) 50 daughters  
|                          | b) 50 % repeatability  
|                          | c) 30 daughters with 1st calving  
|                          | d,e) 40 % repeatability  
|                          | f-j) 15 daughters classified or progeny information equivalent to that  
| Number of evaluations/publications per year | d,e) 2  
|                          | f-j) 6  
| Use in total merit index | a,c-f) Included in total merit index  
|                          | b) Not included in total merit index  
| Name and address and fax number of organization responsible for sire evaluation and publication | National Committee on Danish Cattle Husbandry  
|                          | Udkaersej 15, Skjby  
|                          | DK-8200 Aarhus N DENMARK  
|                          | Tel: +45 86 10 90 88  
|                          | Fax: +45 86 10 97 00  
| Key references on methodology applied | Principles of Danish Cattle breeding.  
|                          | National Committee on Danish Cattle Husbandry  
|                          | Udkaersej 15, Skjby  
|                          | DK-8200 Aarhus, 30 pp.  

#### Country: Finland

| Trait(s): | REPRODUCTION  
|           | a) Female fertility  
|           | b) Male fertility  
|           | c) Calving performance  
| HEALTH | d) Somatic cell count  
|           | e) Mastitis and fertility treatments  
| MILKABILITY | f) Milkability  
|           | g) Udder conformation  
| LOCOMOTION | b) Feet and legs  
| OTHER | i) Temperament  
| Breed(s): | Finnish Ayrshire, Finnish Friesian, Finncaattle  
| 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,b) Classification by special classifiers (1 to 9)  
|                          | f) Classification by AI-technicians (1 to 5)  
|                          | h) 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 | h²: a. 0.05, t=0.135; b. 0.28; c. 0.03; d. 0.21, t=0.43; f,j) 0.15; g,h) 0.4; e) Fertility and Mastitis treatments h²: 0.03; t: 0.06; Total treatments h²: 0.08, t: 0.16  
| Sire categories evaluated | a-e) All sires; f-i) Only young bulls  

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*Note: The table continues on the next page.*
### FACTS ON SIRE EVALUATION PROCEDURES APPLIED FOR NON-PRODUCTION TRAITS

**COUNTRY: FINLAND**

| Environmental effects considered by pre-adjustment | b) AI-station, month  
c) Sex of calf, calving month, no of calving, age at calving (for 1st calves)  
d) Lactation number and days in milk  
e) Year, season, number of calving and herd  
f,g) AI-technician (and leakage for milkability)  
g) Lactation number, month of calving, classifier, test milk, time from milking  
h) Lactation number, classifier |
| --- | --- |
| by evaluation model | a) Herd-year, lactation number, month, PE  
c,f) Breed  
d) Herd-year, age at calving within lactation number, month, PE |
| 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 | a,d) ST BLUP AM  
b) Corrected mean  
c) CC  
d) Modified direct updating |
| Expression of proof | Standardized with mean=100 and SD=10  
a,d) EBV; c,e,f,g) ETA |
| Genetic (reference) base | a,d,e,f,g) Rolling, average of three latest batches of young bulls 1990: 82-83-84  
b) Average of all bulls in evaluation  
c) Average of live cows with max 4 calvings |
| Criteria for official publication of sire proofs | a,d,e) Minimum of 20 daughters  
b) All bulls with at least 50 inseminations  
c) Minimum of 100 observations/bull  
f,g) Minimum of 10 daughters |
| Number of evaluations/publications per year | Twice a year |
| Use in total merit index | a) Fertility index (FI) is used in total merit index of bulls with weight 0.3. FI= (2*DO+1*Fertility Treatments)/3  
b,g) Used with weight 0.05  
c) Used with weight 0.025  
d) Combined udder health index with somatic cell count and mastitis treatments is used with weight 0.3  
e) Total no of treatments is used with weight 0.05  
f) Used with weight 0.1  
h) Not used in total merit index |

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**COUNTRY: FINLAND**

- **Name, address and fax number 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**
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#### COUNTRY: FINLAND

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| Base for age adjustment | - |

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