

FACTS ON APPLIED SIRE-EVALUATION PROCEDURES FOR DAIRY PRODUCTION TRAITS

COUNTRY	THE NETHERLANDS
Breed(s)	Black and White (Holstein Friesian), Dual Purpose (MRY)
Traits evaluated and units of measurement	Milk (kg), fat and protein (kg and %)
Number of lactations	1
Genetic parameters applied	$h^2 = 0.32$ (all traits)
Inclusion and extension of records	Age at calving 22-34 months. Records from culled cows and records in progress which are at least 90 days in milk and extended to a 305-day basis
Sire categories evaluated	All sires
Effects considered by preadjustments	Age, month of calving
by model of evaluation	Herd-year-season, sire, maternal grandsire, group of sires
Base of age adjustment	24 months
Use of genetic groups/relationships/pedigree	Genetic groups of bulls according to breed (% HF genes, dual purpose etc.) and known pedigree (none, sire known, sire and maternal grandsire known) relationship matrix used with sire and maternal grandsire
Method of evaluation used	Single trait BLUP
Expression of genetic merit	BV (kg, %)
Genetic base, kind/definition	Stepwise, average BV of daughters of young bulls evaluated and published May 1988. Distinction made according to breeding goal (milk vs. dual purpose) rather than breeds. <u>Milk</u> : Average BV of daughters of young Black and White bulls with at least 51% Holstein Friesian genes, evaluated in May 1988. <u>Dual Purpose</u> : Average BV of daughters of young Dutch Red and White (MRY) bulls with at least 51% MRV-genes, evaluated in May 1988
Minimum requirements for official publication of sire proofs	$R_{pt} \geq 0.42$
Use of selection index or total merit index	Net profit index (index in Dutch guilders, $BV = kg) -0.125 BV_{milk} + 4.75 BV_{fat} + 7.50 BV_{prot.}$

Name and address of organization responsible for sire evaluations and publishing of results

Royal Dutch Cattle Syndicate
P.O. Box 454
6800 Al Arnhem
The Netherlands

Key references on methodology applied

Quaas, R.L., R.W. Everett and A.E. McClintock. 1979. Maternal Grandsire model for dairy sire evaluation. JDS 62:1648

App. 1

Country: The Netherlands

Number of bulls tested, means and standard deviations of proofs by year

		Breeding values									
Year of birth	No. of bulls	Milk kg		Fat kg		Prot. kg		Fat %		Protein %	
		\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.	\bar{x}	S.D.
Breed: Black and White											
1980	334	-234	531	-9	21.5	-7	15.4	0.02	0.28	0.02	0.13
81	337	-75	501	-0	20.2	-1	14.1	0.06	0.28	0.03	0.13
82	365	17	478	6	19.3	2	13.2	0.10	0.29	0.03	0.14
83	190	187	466	10	15.8	7	12.7	0.04	0.26	0.02	0.12
Breed: Dual Purpose/MRY											
1980	161	-21	471	-3	18.6	-2	14.0	-0.04	0.17	-0.02	0.11
81	272	135	521	3	20.1	3	15.2	-0.04	0.19	-0.02	0.11
82	193	219	540	9	21.5	6	15.5	0.01	0.19	0.02	0.12
83	124	177	427	6	16.3	5	12.2	-0.01	0.16	0.02	0.09

App. 2

Country: The Netherlands

Average phenotypic levels of (adjusted) production records included in the sire evaluation procedures

Year of calving	Milk kg	Fat %	Protein %	Fat kg	Protein kg
Breed: Black and White					
1984	4873	4.23	3.37	206	164
85	5240	4.29	3.39	225	178
86	5570	4.44	3.39	247	189
87	5541	4.43	3.38	248	187
Breed: Dual Purpose/MRY					
1984	4420	4.08	3.45	180	152
85	4751	4.14	3.51	197	167
86	4946	4.28	3.51	212	174
87	4916	4.22	3.48	207	171

Records are adjusted for age (2 years), month of calving (February) and lactation length (305-days). The averages are from the production records included in the May-run of the sire evaluation