COUNTRY'S NAME	GERMANY – HOL, JER, RED
Production traits	**Milk, fat, and protein**
Breed	German HOL (Black & White; Red & White), RED Cattle, JERSEY
Trait definition and unit of measurement	Milk (kg), fat (kg), protein (kg), fat (%), protein (%), all traits collected by official milk recording organizations (A/B herds) according to ICAR rules
Criteria for inclusion & extension of records	All valid test day records from naturally terminated (complete) lactations, part lactations of culled cows and lactations in progress are included. Records of cows with unknown sires are included.
Time period for data inclusion	All test day records since 1990 plus at least 3 generations of pedigree information
Sire categories	All categories of sires (1st and 2nd crop bulls) in evaluation included: Category (B&W, R&W): AI (n=18, 315), NS (n=59, 514), Imported bulls (n=3, 535), ET (n=1, 877).
Number of lactations included in the evaluation	All test day records of 1st, 2nd and 3rd lactation In the total BV lactations 1, 2, 3 are equally weighted (1/3).
Environmental effects: **Pre-adjustment** **Base for age pre-adjustment**	No pre-adjustments. However, standardization for heterogeneous variances within herd – test day and across lactation stage. The lactation stage corrected yield deviations within herd - test days are standardized. The applied standardization factors are estimated during each evaluation procedure dependent on herd level, herd size and average lactation stage within herd test day.
Method (model) of genetic evaluation	ST – ML – FR – TD – BLUP – AM (fixed lactation curves)
Environmental effects in the genetic evaluation model	Fixed: Herd test day effect within 1st lactation, 2nd and 3rd lactation combined, fixed lactation curves defined by lactation * region/breed * calving age * calving year * calving season * calving interval (total 7560 different curves) Random: Permanent environmental effects within each lactation
Use of genetic groups	Fixed genetic groups are defined representing all unknown parents of animals based on breed, sex, year of birth and origin (North American HOL, German HOL, German RED, etc.) of the animal
Genetic parameters in the evaluation	See Appendix I
System validation	- checks on data quality (yield records, pedigree information, etc.) - checks on results: BVs, genetic trend, development of BVs over estimation dates, lactation curves, etc. - Interbull validation methods II and III
Expression of genetic evaluations	EBV (milk kg, fat kg, protein kg, fat %, protein %) RBV (production)= RZM (RelativZuchtwert Milch) 100/12; with relativ weights for milk, fat, protein -HOL (B&W, R&W)= milk-kg 0,0 : fat-kg 0,20 : prot.-kg 0,80 -RED cattle = milk-kg -0,20 : fat-kg 0,13 : prot.-kg 0,67 -JERSEY = milk-kg 0,0 : fat-kg 0,14 : prot.-kg 0,86
Genetic (reference) base **Next base change**	EBV: within each breed all cows born 1995 (Interbull recommended base) RBV: within each breed all AI-bulls born 1990-92 (yearly rolling base) EBV: August 2005 ! all cows born 2000 RBV: August 2001 ! all AI-bulls born 1991 – 93
Criteria for official publication of evaluations	20 daughters in 5 herds with in average 3.0 test day records, reliability > 50 % TOP lists: reliability > 70 %, >50 daughters in >30 herds
Number of evaluations / publications per year	4: each 1st Friday in February, May, August, November
Use in production / total merit index	RBV-total merit= RZG (RelativZuchtwert Gesamt) 100/12 for HOL (B&W, R&W), RED cattle, JERSEY = 100+ 0,88*(RZM - 100) + 0,36*(RZE - 100) + 0,22*(RZS - 100) + 0,16*(RZZ - 100). Relative weights: RZM 0,56; RZE (RBV Conformation) 0,20; RZS (RBV Somatic Cell Score) 0,14; RZZ (RBV Reproduction*) 0,10. *incl. Calving ease, stillbirth, fertility (each direct & paternal) and functional herdlife
Anticipated changes in the near future	None
Key reference on methodology applied	Reents et al., 1995a: J. Dairy Sci. 78: 2847 Reents et al., 1995b: J. Dairy Sci. 78: 2858 Reents, 1998:IB-Bulletin No. 17, Proceedings of Interbull Meeting in NZL, 1998

Key organization: name, address, phone, fax, e-mail, web site	Vereinigte Informationssysteme Tierhaltung w. V. (VIT) Heideweg1, D-27283 Verden phone: #49 - (0)4231 - 955 10 fax: #49 - (0)4231 - 955 166 e-mail: vitzws@vit.de or info@vit.de, web-site: http:\www.vit.de

Appendix I

Genetic parameters for milk, fat and protein yield (test day records), repeatability (t), $\sigma^2_{p,}$ heritabilities (on diagonals), genetic correlations (above diagonal) and phenotypic correlations (below diagonal)*

Trait	Lactation	t	σ^2_p	1	2	3
Milk yield (kg)	1	0.666	17.66	***0.295***	0.924	0.878
	2	0.652	32.66	0.44	***0.242***	0.961
	3	0.635	36.86	0.36	0.43	***0.228***
Fat yield (kg)	1	0.566	0.026	***0.254***	0.922	0.921
	2	0.542	0.052	0.39	***0.202***	0.987
	3	0,521	0,060	0.33	0.39	***0.179***
Protein yield (kg)	1	0.602	0.016	***0.248***	0.915	0.862
	2	0.603	0.029	0.41	***0.229***	0.945
	3	0,586	0.033	0.33	0.42	***0.202***

* Residual correlations between lactation are asummed to "0".

Permanent environmental correlations (below diagonal)

Trait	Lactation	1	2	3
Milk yield (kg)	1			
	2	0.500		
	3	0.347	0.503	
Fat yield (kg)	1			
	2	0.546		
	3	0.41	0.582	
Protein yield (kg)	1			
	2	0.527		
	3	0.381	0.564	

COUNTRY: Germany- HOL, RED, JERSEY

Number of AI bulls (NB) tested, means (X), and standard deviations (SD) of proofs (kg, %) from most recent run (11/2000), by bulls' year of birth (YB) and breed (The average proofs are calculated from all bulls).

		Milk		Fat		Protein		Fat %		Protein %	
YB	NB	X	SD	X	SD	X	SD	X	SD	X	SD
Breed		Holstein Friesian black and white (HOL B&W)**									
1987	2176	-271	462	-8.7	18.1	-9.4	13.2	0.04	0.23	0.00	0.10
1988	2338	-171	507	-5.7	19.1	-6.8	14.6	0.03	0.23	-0.01	0.10
1989	2492	-85	544	-2.6	20.0	-4.4	15.1	0.02	0.23	-0.02	0.10
1990	2840	-12	555	-1.6	19.8	-2.2	15.1	0.00	0.24	-0.02	0.10
1991	3080	125	575	1.2	20.0	2.6	15.8	-0.04	0.24	-0.02	0.10
1992	3537	161	592	3.5	20.5	4.5	16.1	-0.03	0.24	-0.01	0.11
1993	3969	253	630	7.5	23.1	6.4	17.0	-0.03	0.26	-0.02	0.11
1994	4137	432	665	11.7	23.6	11.3	17.9	-0.07	0.27	-0.04	0.12
1995*	2602	621	624	14.7	22.5	15.0	16.7	-0.13	0.25	-0.07	0.12
1996*	350	962	593	24.0	20.7	21.7	15.4	-0.19	0.21	-0.12	0.11
Total	27521	162	646	3.5	22.4	3.2	17.7	-0.03	0.25	-0.02	0.11
Breed		Holstein Friesian red and white (HOL R&W)**									
1987	1009	-294	428	-12.4	17.0	-10.0	12.2	0.01	0.21	0.00	0.10
1988	980	-246	489	-10.7	19.0	-8.7	13.6	0.00	0.22	0.00	0.11
1989	961	-189	498	-7.9	20.2	-6.3	14.4	0.01	0.22	0.01	0.10
1990	976	-124	516	-4.9	20.8	-3.9	14.6	0.01	0.23	0.01	0.11
1991	951	-76	529	-1.9	20.8	-2.4	15.0	0.03	0.25	0.01	0.11
1992	1030	-54	583	0.2	22.4	-0.7	15.5	0.05	0.25	0.03	0.13
1993	956	101	604	6.2	22.9	4.2	16.1	0.04	0.27	0.02	0.13
1994	868	305	658	10.6	21.8	9.0	17.4	-0.02	0.27	-0.01	0.13
1995*	355	463	645	18.1	24.8	13.0	17.4	-0.01	0.28	-0.03	0.14
1996*	32	788	589	34.0	25.1	23.0	18.4	0.01	0.16	-0.05	0.10
Total	8118	-52	586	-1.8	22.6	-1.8	16.5	0.02	0.24	0.01	0.12
Breed		Red Cattle (RED)**									
1987	67	-382	773	-13.6	22.4	-13.3	22.8	0.12	0.40	0.02	0.13
1988	65	-348	512	-9.8	19.4	-9.9	15.6	0.14	0.34	0.05	0.11
1989	79	-379	547	-4.7	20.0	-9.7	15.7	0.25	0.31	0.07	0.13
1990	78	-319	546	-5.7	19.9	-7.6	15.3	0.18	0.26	0.07	0.13
1991	80	-241	486	-1.8	18.1	-5.8	13.7	0.17	0.25	0.05	0.11
1992	87	-39	528	5.8	18.5	0.2	14.8	0.14	0.29	0.03	0.12
1993	82	275	534	6.2	18.0	7.1	15.1	-0.09	0.29	-0.04	0.12
1994	88	431	585	8.6	16.5	10.8	14.7	-0.16	0.31	-0.06	0.14
1995*	48	505	571	10.0	20.6	11.4	16.0	-0.20	0.30	-0.09	0.13
1996*	3	672	150	25.7	7.2	15.5	11.2	-0.10	0.16	-0.12	0.17
Total	677	-57	654	-0.3	20.6	-1.8	18.1	0.07	0.34	0.01	0.13
Breed		Jersey (due to low numbers of bulls per year no figures)									

* Daughters of bulls in those years may not have 3rd or 2nd lactation. Therefore the variance of breeding values of those years may be smaller

** Average EBVs of bulls within birth year and breed, reliability >50%

COUNTRY:

Average of adjusted production records (kg, %) included in the most recent evaluation run, by daughters' year of calving (YC), number of cows (NC) and breed.*

		Milk		Fat		Protein		Fat %		Protein %	
YC	NC	X	SD	X	SD	X	SD	X	SD	X	SD
Breed		Holstein Friesian black and white (HOL B&W)									
1990		5884		247		192		4,19		3,27	
1991		5986		255		196		4,25		3,27	
1992		6115		260		200		4,25		3,27	
1993		6154		262		202		4,25		3,28	
1994		6202		263		204		4,24		3,29	
1995		6247		265		208		4,25		3,32	
1996		6383		268		211		4,20		3,31	
1997		6476		271		213		4,18		3,30	
1998		6734		277		220		4,17		3,32	
Breed		Holstein Friesian Red and White (HOL R&W)									
1990		5151		212		172		4,11		3,34	
1991		5194		218		173		4,20		3,32	
1992		5304		222		176		4,19		3,33	
1993		5365		225		179		4,20		3,33	
1994		5382		226		179		4,19		3,33	
1995		5413		229		182		4,22		3,36	
1996		5564		233		185		4,19		3,33	
1997		5752		241		190		4,19		3,30	
1998		5928		249		198		4,19		3,34	
Breed		Red Cattle (RED)									
1990		4733		240		170		5,07		3,60	
1991		4753		261		170		5,48		3,57	
1992		4886		247		176		5,06		3,60	
1993		4932		248		179		5,03		3,63	
1994		5050		251		180		4,96		3,57	
1995		5165		250		183		4,84		3,55	
1996		5334		256		189		4,80		3,55	
1997		5416		262		193		4,83		3,57	
1998		5624		272		202		4,84		3,59	
Breed		Jersey (due to low number of cows per year no figures)									

* As the used model is a test-day-model, no absolute 305-days figures are available from the model. Table shows figures from all milk recorded heifers by breed (SD not available)