FACTS ON SIRE EVALUATION PROCEDURES APPLIED FOR PRODUCTION TRAITS

COUNTRY: AUSTRIA

Breed(s)	*[I]* Fleckvieh, Pinzgauer, Schwarzbunte *[II]* Braunvieh, Grauvieh
Trait(s) evaluated and unit(s) of measurement	Milk (kg), fat and protein (kg, %)
Number of lactations	*[I]* First three lactations, the first lactation is divided into three 100 day periods *[II]* First three lactations
Genetic parameters assumed	*[I]* Ranges for heritabilities in the 3 lactations and correlations between the periods in 1st lactation and the 2nd and 3rd lactation

	h^2	r_g	r_p
Milk (kg)	0.21 - 0.31	0.54 - 0.73	0.30 - 0.40
Fat (kg)	0.26 - 0.37	0.69 - 0.82	0.24 - 0.34
Prot.(kg)	0.23 - 0.32	0.49 - 0.66	0.27 - 0.37

[II] Heritabilities for the 3 lactations
Milk (kg): 0.34 - 0.30 - 0.26
Fat (kg): 0.30 - 0.27 - 0.23
Prot.(kg): 0.28 - 0.27 - 0.27

Criteria for inclusion and extension of records	*[I]* Records included if there exists at least a 100 day yield / no phenotype extension *[II]* Records from culled cows not included if < 305 days and without a dry period. Lactations finished between 200 and 305 days after calving are included without extension
Sire categories evaluated	All sires.
Environmental effects considered by pre-adjustment	*[I]* Age at calving (1st and 2nd lactation), difference in days between date of calving and first control (only for protein), time between dates of calving for the actual lactation, time between dates of calving for the preceding lactation (only for 2nd and 3rd lactation) *[II]* Month of calving, age at calving (first and second lactation), service period, alpine grazing, lactation number.
by evaluation model	*[I]* Region*herd-class*year*season*alpine grazing. *[II]* Herd-year, group of sires
Base for age adjustment (months)	*[I]* For 1st and 2nd lactation : Fleckvieh (30,43), Pinzgauer (34,47), Schwarzbunte (30,40) *[II]* Average age within 1st lactation (30 mo)

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Use of genetic groups and/or relationships	*[I]* Genetic groups for animals with unknown parents (by year of birth and percentage of foreign genes) / Relationship used *[III]* Genetic groups of sires by year of birth / no relationship used
Method of evaluation	*[I]* MT BLUP AM; *[III]* MT BLUP SM
Expression of proof	*[I]* EBV and RBV standardized with mean 100 and SD=12; *[III]* EBV for all traits and RBV for fat (kg)
Genetic (reference) base	*[I,III]* Fixed, average BV of all bulls born between 1975 and 1977. *[I]* For the production index the actual base of reference is EBV of all bulls born in 1983 to 1985.
Criteria for official publication of sire proofs	30 (Fleckvieh and Braunvieh), 20 (Pinzgauer and Schwarzbunte) and 15 (Grauvieh) daughters
Number of evaluations/ publications per year	3/2
Use of production index	*[I]* 'GESAMTZUCHTWERT'= 1*RBV fat(kg) + 4*RBV protein(kg). ; *[III]* No total index used
Name, address and faxnumber of organization responsible for sire evaluation and publication	Z.A.R. Zentrale Arbeitsgemeinschaft Österreichischer Rinderzüchter A-1060 Wien, Gumpendorferstrasse 15/2 Tel: (+43) 222 / 586 21 01 - 0 Fax: (+43) 222 / 586 21 01 - 20
Key references on methodology applied	*[III]* FUCHS, 1985. Untersuchung über die Anwendung der BLUP-Zuchtwertschätzung beim Rind in Österreich; Dissertation, Wien

COUNTRY: AUSTRIA

Number of AI bulls (NB) tested, means (X) and standard deviations (SD) of proofs (kg) from most recent run, by bull's year of birth (YB) and breed

		Milk		Fat		Protein		Fat %		Protein %	
YB	NB	X	SD	X	SD	X	SD	X	SD	X	SD
Breed:		Fleckvieh									
1975	1290	107	222	4.2	9.9	3.8	5.9	0.00	0.16	0.01	0.10
1976	1260	105	216	4.1	9.6	3.5	5.8	0.00	0.16	0.01	0.09
1977	1309	133	235	5.1	10.6	4.2	6.1	0.00	0.16	0.00	0.09
1978	1188	129	220	5.0	10.3	4.2	6.0	0.00	0.16	0.00	0.09
1979	1196	134	219	5.7	10.4	4.8	5.8	0.01	0.16	0.01	0.09
1980	1268	168	220	7.5	10.4	5.9	5.9	0.02	0.16	0.01	0.09
1981	1223	199	226	9.1	10.6	6.9	6.1	0.03	0.16	0.01	0.09

COUNTRY: AUSTRIA

Number of AI bulls (NB) tested, means (X) and standard deviations (SD) of proofs (kg) from most recent run, by bull's year of birth (YB) and breed

		Milk		Fat		Protein		Fat %		Protein %	
YB	NB	X	SD	X	SD	X	SD	X	SD	X	SD
1982	1171	240	225	11.1	10.7	8.5	6.3	0.03	0.16	0.02	0.09
1983	1108	258	227	12.5	10.8	9.2	6.3	0.05	0.16	0.02	0.09
1984	851	263	212	13.6	10.6	10.1	6.1	0.07	0.15	0.04	0.09
1985	1040	268	199	14.5	10.3	10.7	5.9	0.08	0.15	0.04	0.08
1986	496	284	201	17.2	10.9	11.6	6.1	0.12	0.15	0.05	0.08
Breed:		Braunvieh (percentage of foreign genes (Brown Swiss) ≤ 50 %)									
1975	48	79	198	3.3	8.8	2.2	6.6	0.07	0.13	0.05	0.08
1976	95	0	235	1.2	9.7	0.0	7.3	0.10	0.11	0.05	0.08
1977	107	13	240	0.2	9.6	0.4	6.8	0.06	0.13	0.05	0.07
1978	84	65	218	2.6	9.1	2.4	6.7	0.07	0.14	0.06	0.07
1979	76	165	181	10.0	8.0	7.4	5.4	0.14	0.11	0.10	0.07
1980	46	203	169	12.2	7.1	9.4	5.2	0.15	0.11	0.11	0.06
1981	50	315	243	16.6	9.0	12.4	6.5	0.15	0.12	0.10	0.07
1982	24	190	214	11.3	8.0	9.6	5.9	0.15	0.11	0.13	0.07
1983	48	254	254	18.1	10.6	12.9	6.9	0.24	0.12	0.16	0.09
1984	22	250	206	18.9	10.8	13.0	7.1	0.25	0.11	0.16	0.08
1985	41	360	222	22.4	10.5	16.3	6.6	0.23	0.13	0.15	0.08
Breed:		Braunvieh (percentage of foreign genes (Brown Swiss) > 50 %)									
1975	32	218	279	14.0	12.9	8.8	9.4	0.18	0.16		
1976	73	328	285	16.2	14.5	11.3	10.1	0.12	0.14		
1977	85	268	282	14.1	11.4	9.6	8.7	0.14	0.17		
1978	131	268	252	14.1	11.4	9.6	7.6	0.14	0.16		
1979	118	263	226	15.6	10.1	10.7	6.4	0.17	0.13		
1980	119	276	217	16.2	8.8	11.4	6.5	0.17	0.13		
1981	152	288	246	16.6	10.8	11.9	7.3	0.17	0.14		
1982	152	320	229	18.9	10.4	13.7	7.2	0.19	0.14		
1983	115	322	222	19.5	10.2	14.1	6.8	0.20	0.14		
1984	119	314	248	18.5	9.8	13.8	6.9	0.19	0.15		
1985	17	504	224	27.8	10.2	18.1	7.2	0.21	0.15		
Breed:		Pinzgauer (percentage of foreign genes ≤ 6.25 %)									
1975	144	90	185	3.3	7.8	3.8	5.0	0.00	0.12	0.02	0.08
1976	175	97	170	4.7	7.7	3.4	4.8	0.02	0.12	0.01	0.07
1977	168	78	156	3.3	7.5	3.5	4.5	0.01	0.12	0.02	0.07
1978	210	80	160	3.0	7.5	3.3	4.5	0.00	0.13	0.02	0.06
1979	168	83	177	3.3	8.6	3.5	5.3	0.00	0.12	0.02	0.07
1980	116	96	169	5.7	7.4	4.4	4.8	0.05	0.12	0.03	0.08

COUNTRY: AUSTRIA

Number of AI bulls (NB) tested, means (X) and standard deviations (SD) of proofs (kg) from most recent run, by bull's year of birth (YB) and breed

		Milk		Fat		Protein		Fat %		Protein %	
YB	NB	X	SD	X	SD	X	SD	X	SD	X	SD
1981	115	134	178	5.7	7.9	4.8	5.0	0.01	0.12	0.01	0.08
1982	82	136	146	5.2	6.6	5.7	4.3	0.00	0.13	0.03	0.09
1983	90	168	154	6.8	7.8	5.8	4.8	0.00	0.12	0.01	0.08
1984	87	183	150	8.2	7.8	7.4	4.8	0.02	0.15	0.04	0.08
1985	86	183	170	8.1	8.8	6.9	5.0	0.02	0.13	0.02	0.07
1986	27	236	169	12.7	9.2	8.5	5.3	0.08	0.13	0.02	0.06
Breed:		Pinzgauer (percentage of foreign genes > 6.25 %)									
1975	85	406	226	16.1	10.3	9.3	4.8	0.00	0.15	-0.08	0.08
1976	80	366	197	15.4	8.5	9.6	5.3	0.02	0.15	-0.05	0.07
1977	93	463	217	19.9	9.8	11.6	5.5	0.04	0.17	-0.07	0.08
1978	70	385	239	17.6	10.4	9.6	5.6	0.05	0.15	-0.06	0.08
1979	74	406	245	17.9	11.2	10.1	6.9	0.04	0.15	-0.06	0.09
1980	95	420	217	18.9	11.1	10.9	5.4	0.05	0.15	-0.06	0.08
1981	126	469	251	22.1	13.0	11.7	6.4	0.08	0.21	-0.07	0.09
1982	153	555	295	24.9	13.1	14.2	7.6	0.06	0.16	-0.08	0.08
1983	130	514	296	23.0	14.6	13.8	7.2	0.05	0.17	-0.06	0.09
1984	112	447	246	20.7	12.1	12.5	7.2	0.06	0.17	-0.04	0.08
1985	72	404	182	17.8	9.5	11.6	5.3	0.04	0.13	-0.03	0.07
1986	35	451	203	20.1	9.4	12.9	6.0	0.05	0.13	-0.04	0.06
Breed:		Schwarzbunte									
1975	220	-5	190	1.8	9.8	1.6	4.9	0.04	0.15	0.03	0.07
1976	182	36	219	2.3	9.3	2.1	5.1	0.02	0.16	0.02	0.07
1977	192	30	197	2.7	9.7	2.9	4.6	0.03	0.16	0.04	0.07
1978	172	29	212	3.6	8.8	2.6	5.2	0.05	0.15	0.03	0.06
1979	153	37	181	3.2	8.0	2.6	4.6	0.03	0.15	0.03	0.07
1980	152	29	209	4.0	9.7	3.1	5.5	0.05	0.13	0.04	0.06
1981	141	75	198	4.5	9.6	3.5	4.6	0.03	0.15	0.02	0.07
1982	114	41	188	4.2	9.4	3.7	5.2	0.05	0.16	0.04	0.07
1983	97	71	210	4.7	10.3	4.1	4.7	0.04	0.17	0.04	0.08
1984	70	78	247	7.0	13.6	4.0	6.8	0.07	0.16	0.03	0.07
1985	61	25	261	7.1	12.1	2.6	7.0	0.11	0.18	0.03	0.07
1986	38	153	215	11.4	10.8	5.4	5.4	0.09	0.16	0.01	0.07
Breed:		Grauvieh									
1975	8	91	243	4.5	9.9	3.4	7.6	0.03	0.12	0.02	0.11
1976	11	-62	179	-4.3	6.0	-1.5	4.4	-0.04	0.11	0.01	0.06
1977	20	111	155	5.2	7.4	5.3	4.8	0.03	0.08	0.05	0.06
1978	19	62	190	2.1	7.9	3.1	5.6	0.00	0.10	0.03	0.07
1979	16	136	241	8.6	9.7	7.6	8.0	0.09	0.11	0.09	0.08

COUNTRY: AUSTRIA

Number of AI bulls (NB) tested, means (X) and standard deviations (SD) of proofs (kg) from most recent run, by bull's year of birth (YB) and breed

		Milk		Fat		Protein		Fat %		Protein %	
YB	NB	X	SD	X	SD	X	SD	X	SD	X	SD
1980	22	23	262	4.5	10.0	4.5	7.1	0.11	0.10	0.11	0.07
1981	19	87	139	6.4	6.2	6.7	4.6	0.09	0.11	0.10	0.06
1982	13	33	248	4.3	10.9	5.1	5.3	0.09	0.11	0.11	0.10
1983	14	84	159	6.3	8.2	7.3	5.0	0.08	0.08	0.12	0.05
1984	12	114	180	7.3	7.9	8.2	5.8	0.08	0.07	0.12	0.06

COUNTRY: AUSTRIA

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

YC	Milk	Fat	Protein	Fat %	Protein %
Breed:	Fleckvieh				
1980	4508	186	148	4.13	3.29
1981	4524	187	149	4.13	3.30
1982	4553	189	150	4.15	3.30
1983	4593	190	152	4.14	3.30
1984	4654	194	154	4.17	3.31
1985	4706	197	157	4.19	3.33
1986	4715	199	158	4.22	3.35
1987	4722	200	159	4.24	3.36
Breed:	Braunvieh				
1980	4923	200	160	4.07	3.24
1981	4976	204	161	4.10	3.24
1982	5023	207	162	4.13	3.23
1983	5046	208	163	4.12	3.24
1984	5103	210	165	4.12	3.24
1985	5185	215	169	4.14	3.26
1986	5214	217	171	4.17	3.28
1987	5233	219	172	4.18	3.28
Breed:	Pinzgauer				
1980	4183	166	136	3.97	3.25
1981	4289	172	137	4.00	3.20
1982	4352	173	138	3.99	3.16
1983	4377	174	138	3.97	3.15
1984	4374	175	138	3.99	3.17
1985	4377	175	140	4.01	3.19
1986	4457	178	142	3.99	3.19
1987	4445	177	141	3.99	3.18

COUNTRY: AUSTRIA					
Average of adjusted production records (kg) included in the most recent evaluation run, by daughters' year of calving (YC) and breed					
YC	**Milk**	**Fat**	**Protein**	**Fat %**	**Protein %**
Breed:	Schwarzbunte				
1980	5619	227	175	4.04	3.12
1981	5641	231	177	4.09	3.13
1982	5588	230	174	4.12	3.12
1983	5629	232	175	4.13	3.10
1984	5652	235	176	4.16	3.11
1985	5612	236	176	4.20	3.13
1986	5737	241	180	4.20	3.14
1987	5751	243	181	4.23	3.15
Breed:	Grauvieh				
1980	3892	156	125	4.01	3.21
1981	3985	162	128	4.07	3.21
1982	4047	165	129	4.08	3.19
1983	4045	165	130	4.08	3.21
1984	4044	163	129	4.03	3.19
1985	4048	162	130	4.00	3.21
1986	4135	165	132	3.99	3.19
1987	4187	168	134	4.01	3.20