

Introduction

The latest routine international evaluation for longevity trait took place as scheduled at the Interbull Centre. Data from twenty one (21) populations were included in this evaluation.

International genetic evaluations for direct longevity trait of bulls from Australia, Belgium, Canada, Switzerland, Germany, Denmark-Finland-Sweden, Spain, France, The United Kingdom, Ireland, Israel, Italy, New Zealand, The Netherlands, The United States of America, Hungary, Norway, Slovenia and Czech Republic were computed. Brown Swiss, Guernsey, Holstein, Jersey, Red Dairy Cattle and Simmental breed data were included in this evaluation.

Changes in national procedures

Changes in the national genetic evaluation of longevity traits are as follows:

NOR RDC	Some EDC/Rel changes due to the rolling definition of hys
AUS ALL	Some pedigree changes leading to a type of proof change for some bulls
POL HOL	Data edits causing some decrease in information for some bulls
DEU HOL/RDC	Decrease in information due to data correction
ITA HOL	Decrease in information due to editing system applied
GBR ALL	Some decrease in information due to changes applied by data providers
CHE ALL	Base change Some decrease in information due to the continuous work on the raw data by herd-book organizations and to the merge of two data bases (HOL-CHE and SIM-CHE)
ESP HOL	Edits applied cause decrease in information
NLD HOL	For longevity an adjustment was made in reliability calculation. Now the HYS-effect is absorbed, whereas in the april-run another effect was absorbed. This results for some bulls in lower EDC

INTERBULL CHANGES COMPARED TO THE DECEMBER ROUTINE RUN

Subsetting:

As decided by the ITC in Orlando, new subsetting was introduced in the september test run. Sub-setting is necessary for operational purposes and restrictions of time scales. To minimize the effect of subsetting, larger subsets with 10-12 countries and with 4 link providing countries have been applied.

Window:

According to the decision taken by ITC in Orlando, the following changes have been introduced in regards to the windows used for post processing:

The upper bounds have been set to 0.99 as these were judged to have very little effect on evaluations. The lower values have been set to about the 25% percentile value. The largest changes are for

the lower values for conformation traits, with the lowest window being 40% for OFL otherwise it is about 50% for all other confirmation traits. It is anticipated that these low values may not have large impact on evaluations since there were very few countries combinations whose estimated correlations fell between the old limit of 0.30 and these new limits. DATA AND METHOD OF ANALYSIS

Data were national genetic evaluations of AI sampled bulls with at least 10 daughters or 10 EDC (for clinical mastitis and maternal calving traits at least 50 daughters or 50 EDC, and for direct calving traits at least 50 calvings or 50 EDC) in at least 10 herds. Table 1 presents the amount of data included in this Interbull evaluation for all breeds.

National proofs were first de-regressed within country and then analysed jointly with a linear model including the effects of evaluation country, genetic group of bull and bull merit. Heritability estimates used in both the de-regression and international evaluation were as in each country's national evaluation.

Table 2 presents the date of evaluation as supplied by each country

Estimated genetic parameters and sire standard deviations are shown in APPENDIX I and the corresponding number of common bulls are listed in APPENDIX II.

SCIENTIFIC LITERATURE

The international genetic evaluation procedure is based on international work described in the following scientific publications:

International genetic evaluation computation:
Schaeffer. 1994. J. Dairy Sci. 77:2671-2678
Klei, 1998. Interbull Bulletin 17:3-7

Verification and Genetic trend validation:
Klei et al., 2002. Interbull Bulletin 29:178-182.
Boichard et al., 1995. J. Dairy Sci. 78:431-437

Weighting factors:
Fikse and Banos, 2001. J. Dairy Sci. 84:1759-1767

De-regression:
Sigurdsson and G. Banos. 1995. Acta Agric. Scand. 45:207-219
Jairath et al. 1998. J. Dairy Sci. Vol. 81:550-562

Genetic parameter estimation:
Klei and Weigel, 1998, Interbull Bulletin 17:8-14
Sullivan, 1999. Interbull Bulletin 22:146-148

Post-processing of estimated genetic correlations:
Mark et al., 2003, Interbull Bulletin 30:126-135
Jorjani et al., 2003. J. Dairy Sci. 86:677-679
<https://wiki.interbull.org/public/rG%20procedure?action=print>

Time edits
Weigel and Banos. 1997. J. Dairy Sci. 80:3425-3430

International reliability estimation
Harris and Johnson. 1998. Interbull Bulletin 17:31-36

NEXT ROUTINE INTERNATIONAL EVALUATION

Dates for the next routine evaluation can be found on
<http://www.interbull.org/ib/servicecalendar>.

NZL	0.66	0.49	0.58	0.50	231.91							
USA	0.66	0.88	0.86	0.83	0.49	2.59						
GBR	0.67	0.89	0.83	0.74	0.51	0.79	0.30					
NLD	0.62	0.66	0.75	0.76	0.48	0.78	0.65	329.15				
ZAF	0.57	0.85	0.83	0.61	0.53	0.85	0.77	0.63	29.54			
IRL	0.56	0.75	0.72	0.62	0.58	0.66	0.74	0.47	0.80	1.47		
NOR	0.73	0.62	0.52	0.74	0.47	0.79	0.54	0.65	0.57	0.50	41.00	
CAM	0.52	0.55	0.53	0.57	0.44	0.56	0.57	0.61	0.44	0.44	0.44	9.82

SIM dlo

	FRM	NLD	CZE	SVN	GBR	USA						
FRM	0.99											
NLD	0.58	298.84										
CZE	0.44	0.44	20.22									
SVN	0.64	0.73	0.44	22.74								
GBR	0.54	0.65	0.53	0.72	0.25							
USA	0.71	0.78	0.59	0.80	0.81	2.25						

^LAPPENDIX II. Number of common bulls

BSW

common bulls below diagonal
common three quarter sib group above diagonal

	CAN	CHE	DEA	NLD	NZL	USA	ITA	FRA	GBR	SVN		
CAN	0	109	121	36	22	149	108	76	54	29		
CHE	87	0	540	82	22	301	414	156	61	72		
DEA	96	434	0	122	29	312	662	204	63	96		
NLD	30	77	112	0	20	61	104	68	28	41		
NZL	20	18	23	13	0	27	24	20	17	10		
USA	136	283	273	50	22	0	227	118	74	39		
ITA	90	357	556	84	20	159	0	180	64	92		
FRA	66	120	154	54	17	81	146	0	49	53		
GBR	50	48	43	21	14	70	46	41	0	19		
SVN	26	68	89	41	8	32	91	53	15	0		

GUE

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	CAN	NZL	USA	GBR							
AUS	0	46	26	59	35							
CAN	46	0	13	66	27							
NZL	26	11	0	28	14							
USA	55	56	26	0	83							
GBR	31	22	12	85	0							

HOL

common bulls below diagonal
common three quarter sib group above diagonal

	AUS	BEL	CAN	CHE	DEU	DFS	ESP	FRA	GBR	IRL	ISR	ITA	NLD	NZL	USA	HUN	CZE	SVN	ZAF	POL		
AUS	0	591	1122	508	1436	1134	744	1102	1283	644	95	1046	1210	1032	1584	629	762	157	440	858		
BEL	501	0	589	473	928	697	528	717	755	430	71	665	884	407	737	440	546	150	285	595		
CAN	1028	549	0	739	2085	1190	1104	1225	1474	469	102	1410	1143	615	2828	881	906	179	450	1102		
CHE	437	467	571	0	1012	630	483	549	670	352	57	640	745	342	878	400	482	130	245	570		
DEU	979	928	1336	862	0	2477	1358	2188	2088	821	155	2332	2833	862	3232	1171	1724	278	536	2054		
DFS	754	630	885	541	1623	0	905	1487	1596	701	142	1492	1881	752	1868	850	1183	232	486	1421		
ESP	517	512	615	389	834	653	0	983	1006	454	101	1127	920	462	1368	687	772	172	421	897		
FRA	670	668	683	460	993	661	667	0	1471	672	119	1578	1661	702	2257	858	1154	179	443	1394		

GBR	1111	758	1661	632	1696	1255	851	887	0	943	135	1540	1718	899	2119	865	1097	217	513	1304
IRL	545	420	408	352	714	569	440	503	1000	0	88	619	810	662	707	418	520	115	314	541
ISR	58	44	66	34	128	109	59	56	107	68	0	132	144	100	165	110	111	45	61	125
ITA	704	614	962	562	1433	1054	792	733	1236	530	97	0	1481	687	2325	951	1150	222	471	1397
NLD	975	939	911	688	2352	1530	753	867	1545	735	115	1062	0	889	2070	861	1298	229	466	1451
NZL	1005	331	602	284	642	511	343	369	811	567	80	499	784	0	952	458	579	120	342	572
USA	1456	626	2841	761	2093	1316	842	1059	1961	615	151	1435	1512	888	0	1214	1485	217	601	1739
HUN	459	370	745	315	900	651	539	528	804	369	80	800	657	357	1141	0	853	152	374	856
CZE	463	429	579	350	1306	730	563	671	862	401	83	793	1087	401	1109	781	0	192	402	1146
SVN	111	121	126	98	267	193	133	120	177	91	35	184	190	82	164	116	144	0	97	221
ZAF	370	240	373	199	414	360	361	286	459	273	41	360	371	273	565	293	275	67	0	388
POL	585	529	797	450	1679	1082	603	785	1154	446	97	1001	1227	420	1548	731	887	196	282	0

JER

common bulls below diagonal

common	three	quarter	sib	group	above	diagonal			
	AUS	CAN	DFS	NLD	NZL	USA	GBR	ZAF	IRL
AUS	0	217	129	55	383	429	199	207	48
CAN	221	0	89	28	154	359	153	138	11
DFS	96	78	0	73	130	178	158	131	39
NLD	46	21	70	0	55	64	66	58	27
NZL	426	165	107	47	0	316	205	180	101
USA	458	361	154	68	385	0	230	273	43
GBR	211	159	156	65	219	271	0	164	67
ZAF	201	136	112	53	191	284	175	0	35
IRL	45	9	34	26	113	44	70	35	0

RDC

common bulls below diagonal

common	three	quarter	sib	group	above	diagonal						
	AUS	CAN	DEU	DFS	NZL	USA	GBR	NLD	ZAF	IRL	NOR	CAM
AUS	0	88	36	175	117	108	82	18	35	13	51	9
CAN	89	0	14	135	73	197	88	5	69	4	5	0
DEU	35	13	0	57	17	27	19	13	3	7	18	0
DFS	153	136	48	0	145	169	109	36	48	17	108	0
NZL	118	72	16	141	0	98	72	15	35	8	35	8
USA	108	179	26	163	98	0	108	34	60	23	62	18
GBR	80	88	18	106	68	103	0	24	48	20	40	0
NLD	17	5	13	35	14	33	24	0	2	11	30	0
ZAF	35	71	3	47	31	54	41	2	0	2	0	0
IRL	12	4	7	13	8	23	19	11	2	0	49	0
NOR	42	5	18	79	33	63	42	30	0	48	0	0
CAM	9	0	0	0	8	18	0	0	0	0	0	0

SIM

common bulls below diagonal

common	three	quarter	sib	group	above	diagonal				
	FRM	NLD	CZE	SVN	GBR	USA				
FRM	0	99	163	0	61	28				
NLD	120	0	140	42	42	15				
CZE	192	133	0	59	43	15				
SVN	0	41	57	0	0	0				
GBR	78	40	39	0	0	17				
USA	43	18	15	0	24	0				