
Conversion Factors For Production Traits. Source: INTERBULL 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = PCORR2*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
MSH	AUS	302.40	0.7680	34.000	1.2210	11.700	0.7350	0.4761
MSH	CAN	443.00	0.5490	33.200	0.6880	13.700	0.4170	0.6400
MSH	DEU	855.30	0.5130	68.400	0.7470	29.600	0.4320	0.6241
MSH	DFS	-2201.90	32.6550	-99.700	1.7490	-40.300	0.7780	0.6400
MSH	EST	910.50	0.6750	59.700	0.9110	30.600	0.5390	0.5929
MSH	GBR	208.70	1.3670	19.900	2.1330	8.700	1.3990	0.6241
MSH	IRL	833.45	1.9069	51.285	2.3783	26.031	1.5048	0.5625
MSH	LTU	154.05	1.0661	28.741	1.1770	10.883	0.8753	0.6084
MSH	LVA	704.40	1.1860	47.900	1.5530	23.000	1.0360	0.6084
MSH	NLD	1385.37	0.4321	85.611	0.6429	42.440	0.3237	0.6241
MSH	NOR	-1641.00	26.6430	-77.200	1.4260	-31.900	0.6620	0.6241
MSH	NZL	343.70	0.8460	52.100	1.1000	19.900	0.7270	0.4356
MSH	USA	318.30	0.5400	21.600	0.7920	9.700	0.4630	0.8100
MSH	ZAF	341.96	0.5745	25.367	0.8863	10.282	0.5036	0.6400

Conversion Factors For SCS Traits. Source: INTERBULL 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = SCORR2*Foreign Reliability

breed	country2	a	b	scorr2
MSH	AUS	98.900	-20.0130	0.7744
MSH	CAN	11.900	0.9200	0.7921
MSH	DEU	64.500	0.3800	0.7921
MSH	DFS	62.700	0.4240	0.7921
MSH	EST	73.700	0.2970	0.7921
MSH	GBR	103.200	-0.5000	0.7921
MSH	LTU	100.925	-15.9187	0.7744
MSH	LVA	102.900	-0.0120	0.7744
MSH	NLD	-27.383	1.3290	0.8100
MSH	NOR	64.700	0.3930	0.7744
MSH	NZL	98.400	-12.5720	0.7396
MSH	USA	171.500	-23.0050	0.6724
MSH	ZAF	104.481	-0.2154	0.7744

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=AUS

c a n	c o u	f o r	a	b	t

breed	trait	ntry2	trait	value	value	corr2
MSH	CONFORMATION	AUS	CONFORMATION	3.831	4.1495	0.52
MSH	FEET AND LEGS	AUS	OVERALL FEET & LEG	1.891	7.2401	
MSH	MAMMARY SYSTEM	AUS	OVERALL UDDER SCORE	4.546	3.8655	
MSH	STATURE	AUS	STATURE	-0.143	8.6007	
MSH	CHEST WIDTH	AUS	CHEST WIDTH	3.530	12.9675	
MSH	BODY DEPTH	AUS	BODY DEPTH	2.404	9.1125	
MSH	PIN WIDTH	AUS	RUMP WIDTH	0.705	12.1802	
MSH	RUMP ANGLE	AUS	RUMP ANGLE	-3.056	11.9255	
MSH	FOOT ANGLE	AUS	FOOT ANGLE	-0.595	21.1853	
MSH	REAR LEGS SIDE VIEW	AUS	REAR LEG SET	2.012	24.9305	
MSH	REAR LEG REAR VIEW	AUS	REAR LEG REAR VIEW	0.925	26.2906	
MSH	UDDER DEPTH	AUS	UDDER DEPTH	-0.636	7.8137	
MSH	MEDIAN SUSPENSORY	AUS	MEDIAN SUSPENSORY	1.795	14.4278	
MSH	FORE ATTACHMENT	AUS	FORE UDDER	4.180	14.2705	
MSH	TEAT PLACEMENT	AUS	FRONT TEAT PLACEMENT	3.362	11.3559	
MSH	TEAT LENGTH	AUS	TEAT LENGTH	0.451	11.9485	
MSH	REAR ATTACHMENT HEIGHT	AUS	REAR UDDER HEIGHT	0.933	11.7953	
MSH	REAR TEAT PLACEMENT	AUS	REAR TEAT PLACEMENT	0.903	14.5980	
MSH	ANGULARITY	AUS	ANGULARITY	3.356	12.5296	

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=CAN

breed	trait	country	foreign trait	a value	b value	tcorr

breed	trait	country2	trait	value	value	r2
MSH	CONFORMATION	CAN	CONFORMATION	7.208	0.8019	0.58
MSH	FEET AND LEGS	CAN	OVERALL FEET & LEG	7.742	1.0785	
MSH	MAMMARY SYSTEM	CAN	OVERALL UDDER SCORE	10.615	0.9550	
MSH	STATURE	CAN	STATURE	5.146	0.8781	
MSH	CHEST WIDTH	CAN	CHEST WIDTH	1.192	0.7676	
MSH	BODY DEPTH	CAN	BODY DEPTH	1.600	0.7547	
MSH	PIN WIDTH	CAN	RUMP WIDTH	5.281	0.9767	
MSH	RUMP ANGLE	CAN	RUMP ANGLE	0.633	0.8389	
MSH	FOOT ANGLE	CAN	FOOT ANGLE	4.419	0.9882	
MSH	REAR LEGS SIDE VIEW	CAN	REAR LEG SET	-1.131	0.7991	
MSH	REAR LEG REAR VIEW	CAN	REAR LEG REAR VIEW	4.079	0.7614	
MSH	UDDER DEPTH	CAN	UDDER DEPTH	3.355	0.7407	
MSH	MEDIAN SUSPENSORY	CAN	MEDIAN SUSPENSORY	4.897	0.8192	
MSH	FORE ATTACHMENT	CAN	FORE UDDER	8.817	0.8826	
MSH	TEAT PLACEMENT	CAN	FRONT TEAT PLACEMENT	3.518	1.0702	
MSH	TEAT LENGTH	CAN	TEAT LENGTH	-4.567	1.3515	
MSH	REAR ATTACHMENT HEIGHT	CAN	REAR UDDER HEIGHT	8.987	1.0043	
MSH	REAR TEAT PLACEMENT	CAN	REAR TEAT PLACEMENT	2.809	0.9735	
MSH	ANGULARITY	CAN	ANGULARITY	7.451	0.7312	

Conversion Factors For Type. Source = INTERBULL MACE 2212
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Converted Proof Reliability = TCORR2*Foreign Reliability

country2=DEU

breed	trait	country2	trait	value	value	r2

MSH	FEET AND LEGS	DEU	OVERALL FEET & LEG	-25.865	0.3562	
MSH	MAMMARY SYSTEM	DEU	OVERALL UDDER SCORE	-24.093	0.3405	
MSH	STATURE	DEU	STATURE	-35.218	0.4207	
MSH	CHEST WIDTH	DEU	CHEST WIDTH	-40.839	0.4513	
MSH	BODY DEPTH	DEU	BODY DEPTH	-42.300	0.4538	
MSH	PIN WIDTH	DEU	RUMP WIDTH	-49.918	0.5682	
MSH	RUMP ANGLE	DEU	RUMP ANGLE	-56.673	0.5399	
MSH	FOOT ANGLE	DEU	FOOT ANGLE	-33.703	0.4258	
MSH	REAR LEGS SIDE VIEW	DEU	REAR LEG SET	-66.700	0.6171	
MSH	REAR LEG REAR VIEW	DEU	REAR LEG REAR VIEW	-43.020	0.5045	
MSH	UDDER DEPTH	DEU	UDDER DEPTH	-28.027	0.3199	
MSH	MEDIAN SUSPENSORY	DEU	MEDIAN SUSPENSORY	-36.047	0.4015	
MSH	FORE ATTACHMENT	DEU	FORE UDDER	-35.712	0.4320	
MSH	TEAT PLACEMENT	DEU	FRONT TEAT PLACEMENT	-43.639	0.4716	
MSH	TEAT LENGTH	DEU	TEAT LENGTH	-55.717	0.4919	
MSH	REAR ATTACHMENT HEIGHT	DEU	REAR UDDER HEIGHT	-32.335	0.3929	
MSH	REAR TEAT PLACEMENT	DEU	REAR TEAT PLACEMENT	-37.783	0.3813	
MSH	ANGULARITY	DEU	ANGULARITY	-36.010	0.4338	

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=DFS

breed	trait	country2	trait	avalue	bvalue	tcorr2
MSH	CONFORMATION	DFS	CONFORMATION	-45.635	0.4755	0.59
MSH	FEET AND LEGS	DFS	OVERALL FEET & LEG	-34.329	0.4110	
MSH	MAMMARY SYSTEM	DFS	OVERALL UDDER SCORE	-45.212	0.5449	

MSH	STATURE	DFS	STATURE	-60.742	0.6426
MSH	CHEST WIDTH	DFS	CHEST WIDTH	-37.843	0.4084
MSH	BODY DEPTH	DFS	BODY DEPTH	-40.023	0.3912
MSH	PIN WIDTH	DFS	RUMP WIDTH	-51.554	0.5538
MSH	RUMP ANGLE	DFS	RUMP ANGLE	-49.310	0.5041
MSH	FOOT ANGLE	DFS	FOOT ANGLE	-63.945	0.6763
MSH	REAR LEGS SIDE VIEW	DFS	REAR LEG SET	-60.377	0.6182
MSH	REAR LEG REAR VIEW	DFS	REAR LEG REAR VIEW	-41.859	0.4661
MSH	UDDER DEPTH	DFS	UDDER DEPTH	-34.783	0.3930
MSH	MEDIAN SUSPENSORY	DFS	MEDIAN SUSPENSORY	-34.390	0.3520
MSH	FORE ATTACHMENT	DFS	FORE UDDER	-38.815	0.4673
MSH	TEAT PLACEMENT	DFS	FRONT TEAT PLACEMENT	-47.451	0.5152
MSH	TEAT LENGTH	DFS	TEAT LENGTH	-69.156	0.6396
MSH	REAR ATTACHMENT HEIGHT	DFS	REAR UDDER HEIGHT	-49.955	0.5424
MSH	REAR TEAT PLACEMENT	DFS	REAR TEAT PLACEMENT	-44.019	0.4366
MSH	ANGULARITY	DFS	ANGULARITY	-58.523	0.6115

Conversion Factors For Type. Source = INTERBULL MACE 2212
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Converted Proof Reliability = TCORR2*Foreign Reliability

country2=GBR

breed	canttrait	countryi2	forttrait	avalue	bvalue	tcorr2
MSH	FEET AND LEGS	GBR	OVERALL FEET & LEG	6.776	3.8033	
MSH	MAMMARY SYSTEM	GBR	OVERALL UDDER SCORE	10.803	3.7114	
MSH	STATURE	GBR	STATURE	2.146	4.4079	
MSH	CHEST WIDTH	GBR	CHEST WIDTH	4.444	3.2475	

MSH	BODY DEPTH	GBR	BODY DEPTH	3.148	2.8796
MSH	PIN WIDTH	GBR	RUMP WIDTH	4.270	4.1730
MSH	RUMP ANGLE	GBR	RUMP ANGLE	-1.057	3.2461
MSH	FOOT ANGLE	GBR	FOOT ANGLE	2.359	4.1578
MSH	REAR LEGS SIDE VIEW	GBR	REAR LEG SET	-2.214	3.3849
MSH	UDDER DEPTH	GBR	UDDER DEPTH	2.734	2.3166
MSH	MEDIAN SUSPENSORY	GBR	MEDIAN SUSPENSORY	4.278	2.8196
MSH	FORE ATTACHMENT	GBR	FORE UDDER	9.636	3.5934
MSH	TEAT PLACEMENT	GBR	FRONT TEAT PLACEMENT	6.177	4.1131
MSH	TEAT LENGTH	GBR	TEAT LENGTH	-4.783	4.8494
MSH	REAR ATTACHMENT HEIGHT	GBR	REAR UDDER HEIGHT	7.394	4.0978
MSH	ANGULARITY	GBR	ANGULARITY	3.644	4.3820

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=LVA

breed	canadian trait	country2	foreign trait	a value	b value	tcor2
MSH	STATURE	LVA	STATURE	-8.850	8.8554	
MSH	CHEST WIDTH	LVA	CHEST WIDTH	-1.362	17.2124	
MSH	BODY DEPTH	LVA	BODY DEPTH	-2.342	13.7010	
MSH	PIN WIDTH	LVA	RUMP WIDTH	-3.934	15.1154	
MSH	RUMP ANGLE	LVA	RUMP ANGLE	-9.425	12.1726	
MSH	FOOT ANGLE	LVA	FOOT ANGLE	2.106	25.3799	
MSH	REAR LEGS SIDE VIEW	LVA	REAR LEG SET	-13.178	20.7368	
MSH	REAR LEG REAR VIEW	LVA	REAR LEG REAR VIEW	0.469	23.5275	
MSH	UDDER DEPTH	LVA	UDDER DEPTH	-4.154	9.9376	

MSH	MEDIAN SUSPENSORY	LVA	MEDIAN SUSPENSORY	-2.825	16.3717	
MSH	FORE ATTACHMENT	LVA	FORE UDDER	-4.014	16.2607	
MSH	TEAT PLACEMENT	LVA	FRONT TEAT PLACEMENT	-4.101	16.4392	
MSH	TEAT LENGTH	LVA	TEAT LENGTH	-10.435	13.8781	
MSH	REAR ATTACHMENT HEIGHT	LVA	REAR UDDER HEIGHT	-7.717	15.1955	
MSH	REAR TEAT PLACEMENT	LVA	REAR TEAT PLACEMENT	-8.545	15.0383	
MSH	ANGULARITY	LVA	ANGULARITY	-8.709	20.8927	

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NLD

breed	trait	country2	foreign trait	a value	b value	tcorr2
MSH	CONFORMATION	NLD	CONFORMATION	-145.341	1.6431	0.61
MSH	FEET AND LEGS	NLD	OVERALL FEET & LEG	-72.469	0.8204	
MSH	MAMMARY SYSTEM	NLD	OVERALL UDDER SCORE	-125.931	1.4652	
MSH	STATURE	NLD	STATURE	-100.957	1.1774	
MSH	CHEST WIDTH	NLD	CHEST WIDTH	-102.476	1.1420	
MSH	BODY DEPTH	NLD	BODY DEPTH	-91.247	1.0520	
MSH	PIN WIDTH	NLD	RUMP WIDTH	-82.401	0.9373	
MSH	RUMP ANGLE	NLD	RUMP ANGLE	-86.583	0.8688	
MSH	FOOT ANGLE	NLD	FOOT ANGLE	-116.168	1.2589	
MSH	REAR LEGS SIDE VIEW	NLD	REAR LEG SET	-112.028	1.0603	
MSH	REAR LEG REAR VIEW	NLD	REAR LEG REAR VIEW	-96.057	1.0339	
MSH	UDDER DEPTH	NLD	UDDER DEPTH	-92.062	1.0056	
MSH	MEDIAN SUSPENSORY	NLD	MEDIAN SUSPENSORY	-97.828	1.0471	

MSH	FORE ATTACHMENT	NLD	FORE UDDER	-121.771	1.3548	
MSH	TEAT PLACEMENT	NLD	FRONT TEAT PLACEMENT	-124.202	1.3479	
MSH	TEAT LENGTH	NLD	TEAT LENGTH	-129.545	1.2749	
MSH	REAR ATTACHMENT HEIGHT	NLD	REAR UDDER HEIGHT	-112.983	1.3159	
MSH	REAR TEAT PLACEMENT	NLD	REAR TEAT PLACEMENT	-100.846	1.0665	
MSH	ANGULARITY	NLD	ANGULARITY	-95.768	1.1518	

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NOR

breed	trait	country2	trait	avalue	bvalue	tcorr2
MSH	CONFORMATION	NOR	CONFORMATION	-30.466	0.3094	0.58
MSH	FEET AND LEGS	NOR	OVERALL FEET & LEG	-37.973	0.3954	
MSH	MAMMARY SYSTEM	NOR	OVERALL UDDER SCORE	-40.546	0.4091	
MSH	STATURE	NOR	STATURE	-42.685	0.4112	
MSH	CHEST WIDTH	NOR	CHEST WIDTH	-30.551	0.3724	
MSH	BODY DEPTH	NOR	BODY DEPTH	-30.889	0.3002	
MSH	PIN WIDTH	NOR	RUMP WIDTH	-35.531	0.4205	
MSH	RUMP ANGLE	NOR	RUMP ANGLE	-39.586	0.4170	
MSH	FOOT ANGLE	NOR	FOOT ANGLE	-44.367	0.4651	
MSH	REAR LEGS SIDE VIEW	NOR	REAR LEG SET	-45.014	0.4580	
MSH	REAR LEG REAR VIEW	NOR	REAR LEG REAR VIEW	-35.911	0.3783	
MSH	UDDER DEPTH	NOR	UDDER DEPTH	-30.809	0.2935	
MSH	MEDIAN SUSPENSORY	NOR	MEDIAN SUSPENSORY	-41.553	0.3931	
MSH	FORE ATTACHMENT	NOR	FORE UDDER	-42.019	0.4460	
MSH	TEAT PLACEMENT	NOR	FRONT TEAT PLACEMENT	-44.248	0.4359	

MSH	TEAT LENGTH	NOR	TEAT LENGTH	-59.854	0.5339	
MSH	REAR ATTACHMENT HEIGHT	NOR	REAR UDDER HEIGHT	-46.095	0.4371	
MSH	REAR TEAT PLACEMENT	NOR	REAR TEAT PLACEMENT	-39.586	0.3992	
MSH	ANGULARITY	NOR	ANGULARITY	-40.001	0.3621	

Conversion Factors For Type. Source = INTERBULL MACE 2212
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Converted Proof Reliability = TCORR2*Foreign Reliability

country2=NZL

breed	canait	countryc2	foortrait	avalue	bvalue	tcor2
MSH	CONFORMATION	NZL	CONFORMATION	1.166	17.0275	0.53
MSH	MAMMARY SYSTEM	NZL	OVERALL UDDER SCORE	0.257	16.3403	
MSH	STATURE	NZL	STATURE	-6.769	11.4535	
MSH	CHEST WIDTH	NZL	CHEST WIDTH	3.508	15.2056	
MSH	BODY DEPTH	NZL	BODY DEPTH	1.982	12.3534	
MSH	PIN WIDTH	NZL	RUMP WIDTH	-0.301	17.9096	
MSH	RUMP ANGLE	NZL	RUMP ANGLE	-4.127	17.5915	
MSH	REAR LEGS SIDE VIEW	NZL	REAR LEG SET	1.897	45.6280	
MSH	MEDIAN SUSPENSORY	NZL	MEDIAN SUSPENSORY	-0.778	14.0938	
MSH	FORE ATTACHMENT	NZL	FORE UDDER	1.046	14.4080	
MSH	TEAT PLACEMENT	NZL	FRONT TEAT PLACEMENT	-2.876	25.0977	
MSH	TEAT LENGTH	NZL	TEAT LENGTH	3.255	18.3832	
MSH	REAR ATTACHMENT HEIGHT	NZL	REAR UDDER HEIGHT	1.194	16.9563	
MSH	REAR TEAT PLACEMENT	NZL	REAR TEAT PLACEMENT	-3.249	17.4145	

Conversion Factors For Type. Source = INTERBULL MACE 2212
Converted Canadian Proof = A + (B* Foreign Proof)
Converted Proof Reliability = TCORR2*Foreign Reliability

country2=USA

breed	can trait	country2	for trait	a value	b value	t corr2
MSH	CONFORMATION	USA	CONFORMATION	8.266	8.9909	0.62
MSH	FEET AND LEGS	USA	OVERALL FEET & LEG	6.291	4.0924	
MSH	MAMMARY SYSTEM	USA	OVERALL UDDER SCORE	10.598	5.8005	
MSH	STATURE	USA	STATURE	5.241	2.3627	
MSH	CHEST WIDTH	USA	CHEST WIDTH	3.335	4.2055	
MSH	BODY DEPTH	USA	BODY DEPTH	3.716	3.4706	
MSH	PIN WIDTH	USA	RUMP WIDTH	5.675	4.1106	
MSH	RUMP ANGLE	USA	RUMP ANGLE	-1.032	3.1042	
MSH	FOOT ANGLE	USA	FOOT ANGLE	3.165	5.9453	
MSH	REAR LEGS SIDE VIEW	USA	REAR LEG SET	-3.303	6.1525	
MSH	REAR LEG REAR VIEW	USA	REAR LEG REAR VIEW	3.998	-5.5409	
MSH	UDDER DEPTH	USA	UDDER DEPTH	3.313	3.1962	
MSH	MEDIAN SUSPENSORY	USA	MEDIAN SUSPENSORY	2.843	4.0588	
MSH	FORE ATTACHMENT	USA	FORE UDDER	9.003	3.6639	
MSH	TEAT PLACEMENT	USA	FRONT TEAT PLACEMENT	3.666	4.3197	
MSH	TEAT LENGTH	USA	TEAT LENGTH	-3.327	4.0931	
MSH	REAR ATTACHMENT HEIGHT	USA	REAR UDDER HEIGHT	8.817	4.0912	
MSH	REAR TEAT PLACEMENT	USA	REAR TEAT PLACEMENT	2.947	3.9943	
MSH	ANGULARITY	USA	ANGULARITY	7.866	4.8657	

CALCULATION OF FAT% AND PROTEIN% FOR DECEMBER 2022

BREED	BMILK	BFAT	BPRT

AYS	8022	335	275
BSW	8509	362	304
CN	5772	250	212
GUE	6832	315	242
JER	7049	363	274
HOL	10836	431	355
MS	7483	287	248

EBVFAT% = 200*[(BFAT+EBVFAT*0.5)/(BMILK+EBVMILK*0.5)-(BFAT/BMILK)]
EBVPROT%= 200*[(BPRT+EBVPRT*0.5)/(BMILK+EBVMILK*0.5)-(BPRT/BMILK)]

EXAMPLE:

A HOLSTEIN bull has EBV MILK=+1000, EBVFAT=+50, EBVPROT=+40

EBVFAT% = 200 * [(431+50*.5)/(10836+1000*.5)-(431/11E3)]
= 200 * [(431+25)/(10836+500)-(0.03977)]
= 200 * [0.04023 - 0.03977]
= 200 * 0.00045
= 0.09

EBVPRT% = 200 * [(355+40*.5)/(10836+1000*.5)-(355/11E3)]
= 200 * [(355+20)/(10836+500)-(0.03276)]
= 200 * [0.03308 - 0.03276]
= 200 * 0.00032
= 0.06