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 Conversion Factors For Production Traits. Source: INTERBULL 2004  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = PCORR2\*Foreign Reliability

breed	country2	amilk	bmilk	afat	bfat	aprot	bprot	pcorr2
BSW	AUS	-37.98	1.1737	-0.001	1.2578	-1.645	1.3428	0.5041
BSW	CHE	-166.20	1.1600	-5.800	1.1600	-3.500	1.2060	0.7056
BSW	DEA	320.20	1.2820	16.600	1.4190	15.400	1.4310	0.7225
BSW	FRA	73.90	0.9360	4.200	0.9190	5.300	0.9840	0.7056
BSW	GBR	11.61	2.0248	2.369	2.3237	2.718	2.5351	0.7056
BSW	ITA	-437.10	0.9660	-11.900	1.0880	-12.000	0.9510	0.7225
BSW	NLD	1247.59	0.8597	45.171	0.9128	42.266	0.9206	0.7225
BSW	NZL	136.00	1.2595	29.435	1.2269	10.225	1.3975	0.4900
BSW	SVN	-7376.50	64.0660	-287.800	2.5050	-257.100	2.2330	0.6724
BSW	USA	29.50	0.9730	1.700	1.0900	0.000	1.1830	0.7921

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 Conversion Factors For SCS Traits. Source: INTERBULL 2004  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = SCORR2\*Foreign Reliability

breed	country2	a	b	scorr2
BSW	CHE	45.400	0.5470	0.8281
BSW	DEA	53.300	0.4710	0.8464
BSW	FRA	100.400	5.5000	0.8464
BSW	GBR	100.566	-0.4459	0.8281
BSW	ITA	63.900	0.3400	0.7921
BSW	NLD	-30.844	1.3239	0.8100
BSW	NZL	93.533	-16.6925	0.7569
BSW	SVN	41.400	0.5610	0.7921
BSW	USA	180.800	-27.3710	0.8281

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 Conversion Factors For Type. Source = INTERBULL MACE 2004  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=CHE

	c	c	f			
	a	o	o			
	n	u	r	a	b	t
b	t	n	t	v	v	c
r	r	t	r	a	a	o
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2

  

BSW CONFORMATION	CHE FINAL SCORE	-76.353	0.7567	0.74
BSW DAIRY STRENGTH	CHE OVERALL FRAME	-48.805	0.4723	

BSW RUMP	CHE OVERALL RUMP	-28.036	0.2888
BSW FEET AND LEGS	CHE OVERALL FEET & LEG	-62.189	0.6236
BSW MAMMARY SYSTEM	CHE OVERALL UDDER SCORE	-55.815	0.5557
BSW STATURE	CHE STATURE	-52.222	0.5074
BSW THURL PLACEMENT	CHE THURL PLACEMENT	-55.415	0.5587
BSW CHEST WIDTH	CHE CHEST WIDTH	-78.779	0.8142
BSW BODY DEPTH	CHE BODY DEPTH	-56.208	0.5541
BSW LOIN STRENGTH	CHE TOP LINE	-48.614	0.5156
BSW PIN WIDTH	CHE RUMP WIDTH	-54.924	0.5738
BSW RUMP ANGLE	CHE RUMP ANGLE	-58.298	0.5912
BSW BONE QUALITY	CHE HOCK QUALITY	-61.830	0.5954
BSW FOOT ANGLE	CHE FOOT ANGLE	-39.451	0.3855
BSW HEEL DEPTH	CHE HEEL DEPTH	-57.429	0.5833
BSW REAR LEGS SIDE VIEW	CHE REAR LEG SET	-52.630	0.5304
BSW UDDER DEPTH	CHE UDDER DEPTH	-51.892	0.5213
BSW MEDIAN SUSPENSORY	CHE MEDIAN SUSPENSORY	-64.622	0.6255
BSW FORE ATTACHMENT	CHE FORE UDDER	-54.237	0.5354
BSW FRONT TEAT PLACEMENT	CHE FRONT TEAT PLACEMENT	-52.832	0.5243
BSW TEAT LENGTH	CHE TEAT LENGTH	-41.728	0.3920
BSW REAR ATTACHMENT HEIGHT	CHE REAR UDDER HEIGHT	-62.062	0.6121
BSW REAR ATTACHMENT WIDTH	CHE REAR UDDER WIDTH	-65.500	0.6499
BSW REAR TEAT PLACEMENT	CHE REAR TEAT PLACEMENT	-45.324	0.4543
BSW ANGULARITY	CHE ANGULARITY	58.369	-0.6427

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Conversion Factors For Type. Source = INTERBULL MACE 2004  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=DEA

	c	c	f			
	a	o	o		b	t
b	n	u	r	a	v	c
r	t	n	t	v	a	r
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2
BSW CONFORMATION	DEA CONFORMATION	-65.002	0.5992	0.69		
BSW DAIRY STRENGTH	DEA OVERALL FRAME	-60.150	0.5527			
BSW RUMP	DEA OVERALL RUMP	-41.400	0.4030			
BSW FEET AND LEGS	DEA OVERALL FEET & LEG	-43.848	0.4160			
BSW MAMMARY SYSTEM	DEA OVERALL UDDER SCORE	-61.000	0.5626			
BSW STATURE	DEA STATURE	-59.781	0.5560			
BSW THURL PLACEMENT	DEA THURL PLACEMENT	-41.009	0.4275			
BSW CHEST WIDTH	DEA CHEST WIDTH	-66.559	0.6600			
BSW BODY DEPTH	DEA BODY DEPTH	-52.494	0.5042			
BSW LOIN STRENGTH	DEA TOP LINE	-53.665	0.5319			
BSW PIN WIDTH	DEA RUMP WIDTH	-51.443	0.5161			
BSW RUMP ANGLE	DEA RUMP ANGLE	-54.822	0.5631			
BSW BONE QUALITY	DEA HOCK QUALITY	-52.944	0.5063			
BSW FOOT ANGLE	DEA FOOT ANGLE	-48.086	0.4611			
BSW HEEL DEPTH	DEA HEEL DEPTH	-53.276	0.5246			
BSW REAR LEGS SIDE VIEW	DEA REAR LEG SET	-56.987	0.5604			
BSW UDDER DEPTH	DEA UDDER DEPTH	-52.316	0.4997			
BSW MEDIAN SUSPENSORY	DEA MEDIAN SUSPENSORY	-69.915	0.6636			

BSW FORE ATTACHMENT	DEA FORE UDDER	-56.884	0.5491
BSW FRONT TEAT PLACEMENT	DEA FRONT TEAT PLACEMENT	-67.681	0.6452
BSW TEAT LENGTH	DEA TEAT LENGTH	-51.885	0.5161
BSW REAR ATTACHMENT HEIGHT	DEA REAR UDDER HEIGHT	-54.116	0.4982
BSW REAR ATTACHMENT WIDTH	DEA REAR UDDER WIDTH	-60.480	0.5656
BSW REAR TEAT PLACEMENT	DEA REAR TEAT PLACEMENT	-55.969	0.5322

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Conversion Factors For Type. Source = INTERBULL MACE 2004  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=FRA

	c	c	f			
	a	o	o		b	t
b	n	u	r	a	v	c
r	t	n	t	v	v	o
e	r	t	r	a	a	r
e	a	r	a	l	l	r
d	i	y	i	u	u	r
	t	2	t	e	e	2
BSW CONFORMATION	FRA OVERALL SCORE	-2.629	6.3775	0.64		
BSW DAIRY STRENGTH	FRA OVERALL FRAME	-2.969	6.8099			
BSW RUMP	FRA OVERALL RUMP	-0.074	5.7907			
BSW FEET AND LEGS	FRA OVERALL FEET & LEG	-1.392	3.8196			
BSW MAMMARY SYSTEM	FRA OVERALL UDDER SCORE	-2.320	7.3442			
BSW STATURE	FRA STATURE	-2.297	6.8686			
BSW THURL PLACEMENT	FRA THURL PLACEMENT	1.841	6.1286			
BSW CHEST WIDTH	FRA CHEST DEPTH	0.051	8.1711			
BSW BODY DEPTH	FRA BODY DEPTH	-1.544	5.6754			
BSW LOIN STRENGTH	FRA TOP LINE	-0.457	5.0066			
BSW PIN WIDTH	FRA RUMP WIDTH	0.079	7.3060			
BSW RUMP ANGLE	FRA RUMP ANGLE	2.365	7.1421			
BSW BONE QUALITY	FRA HOCK QUALITY	-2.539	6.1653			
BSW FOOT ANGLE	FRA HEEL DEPTH	-0.326	5.2850			
BSW HEEL DEPTH	FRA HEEL DEPTH	0.313	5.9353			
BSW REAR LEGS SIDE VIEW	FRA REAR LEG SET	-1.725	6.5855			
BSW UDDER DEPTH	FRA UDDER DEPTH	-1.079	6.1944			
BSW MEDIAN SUSPENSORY	FRA MEDIAN SUSPENSORY	-0.525	7.5737			
BSW FORE ATTACHMENT	FRA FORE UDDER	-1.617	7.1694			
BSW FRONT TEAT PLACEMENT	FRA FRONT TEAT PLACEMENT	-2.385	7.5450			
BSW TEAT LENGTH	FRA TEAT LENGTH	0.219	6.1946			
BSW REAR ATTACHMENT HEIGHT	FRA REAR UDDER HEIGHT	-2.355	7.0061			
BSW REAR ATTACHMENT WIDTH	FRA REAR UDDER WIDTH	-1.838	7.8697			
BSW REAR TEAT PLACEMENT	FRA REAR TEAT PLACEMENT	-0.535	6.8167			
BSW ANGULARITY	FRA ANGULARITY	-4.419	8.3913			

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Conversion Factors For Type. Source = INTERBULL MACE 2004  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=GBR

	c	c	f			
	a	o	o		b	t
b	n	u	r	a	v	c
r	t	n	t	v	v	c
e	r	t	r	a	a	r
e	a	r	a	l	l	r
d	i	y	i	u	u	r
	t	2	t	e	e	2
BSW FEET AND LEGS		GBR OVERALL FEET & LEG		-1.026	3.8275	
BSW MAMMARY SYSTEM		GBR OVERALL UDDER SCORE		-2.824	4.6750	
BSW STATURE		GBR STATURE		-1.084	8.0627	
BSW CHEST WIDTH		GBR CHEST WIDTH		0.445	5.6286	
BSW BODY DEPTH		GBR BODY DEPTH		0.331	3.7608	
BSW PIN WIDTH		GBR RUMP WIDTH		-0.180	4.9455	
BSW RUMP ANGLE		GBR RUMP ANGLE		1.597	3.3731	
BSW FOOT ANGLE		GBR FOOT ANGLE		-0.864	5.5911	
BSW REAR LEGS SIDE VIEW		GBR REAR LEG SET		-1.926	4.9929	
BSW UDDER DEPTH		GBR UDDER DEPTH		-1.260	3.4877	
BSW MEDIAN SUSPENSORY		GBR MEDIAN SUSPENSORY		-1.401	2.1284	
BSW FORE ATTACHMENT		GBR FORE UDDER		-3.273	5.1015	
BSW TEAT PLACEMENT		GBR FRONT TEAT PLACEMENT		-0.411	4.9429	
BSW TEAT LENGTH		GBR TEAT LENGTH		-0.560	4.1610	
BSW REAR ATTACHMENT HEIGHT		GBR REAR UDDER HEIGHT		-1.310	3.7705	
BSW ANGULARITY		GBR ANGULARITY		-3.094	10.2706	

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Conversion Factors For Type. Source = INTERBULL MACE 2004  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=ITA

	c	c	f			
	a	o	o		b	t
b	n	u	r	a	v	c
r	t	n	t	v	v	c
e	r	t	r	a	a	r
e	a	r	a	l	l	r
d	i	y	i	u	u	r
	t	2	t	e	e	2
BSW CONFORMATION		ITA FINAL SCORE		-78.757	0.7149	0.69
BSW DAIRY STRENGTH		ITA OVERALL FRAME		-38.345	0.3406	
BSW RUMP		ITA OVERALL RUMP		-38.184	0.3577	
BSW FEET AND LEGS		ITA OVERALL FEET & LEG		-37.769	0.3301	
BSW MAMMARY SYSTEM		ITA OVERALL UDDER SCORE		-73.859	0.6667	
BSW STATURE		ITA STATURE		-47.443	0.4284	
BSW THURL PLACEMENT		ITA THURL PLACEMENT		-20.998	0.2216	
BSW CHEST WIDTH		ITA STRENGTH		-32.700	0.3190	
BSW BODY DEPTH		ITA BODY DEPTH		-29.983	0.2882	
BSW LOIN STRENGTH		ITA TOP LINE		-26.156	0.2557	
BSW PIN WIDTH		ITA RUMP WIDTH		-34.135	0.3238	
BSW RUMP ANGLE		ITA RUMP ANGLE		-27.230	0.2844	
BSW BONE QUALITY		ITA HOCK QUALITY		-34.862	0.3053	
BSW FOOT ANGLE		ITA FOOT ANGLE		-31.297	0.2749	
BSW HEEL DEPTH		ITA HEEL DEPTH		-32.487	0.2960	
BSW REAR LEGS SIDE VIEW		ITA REAR LEG SET		-29.299	0.2844	

BSW UDDER DEPTH	ITA UDDER DEPTH	-32.853	0.2936
BSW MEDIAN SUSPENSORY	ITA MEDIAN SUSPENSORY	-41.641	0.3811
BSW FORE ATTACHMENT	ITA FORE UDDER	-34.369	0.3037
BSW TEAT PLACEMENT	ITA FRONT TEAT PLACEMENT	-32.928	0.2870
BSW TEAT LENGTH	ITA TEAT LENGTH	-31.121	0.3139
BSW REAR ATTACHMENT HEIGHT	ITA REAR UDDER HEIGHT	-52.332	0.4626
BSW REAR ATTACHMENT WIDTH	ITA REAR UDDER WIDTH	-54.199	0.4887
BSW REAR TEAT PLACEMENT	ITA REAR TEAT PLACEMENT	-32.654	0.2982

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Conversion Factors For Type. Source = INTERBULL MACE 2004  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=NLD

	c	c	f			
	a	o	o	a	b	t
b	t	n	t	v	v	c
r	r	t	r	a	a	o
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2
BSW CONFORMATION		NLD CONFORMATION		-174.645	1.7646	0.58
BSW FEET AND LEGS		NLD OVERALL FEET & LEG		-146.961	1.3449	
BSW MAMMARY SYSTEM		NLD OVERALL UDDER SCORE		-153.602	1.6453	
BSW STATURE		NLD STATURE		-146.090	1.4803	
BSW CHEST WIDTH		NLD CHEST WIDTH		-176.779	1.7661	
BSW BODY DEPTH		NLD BODY DEPTH		-123.443	1.3006	
BSW PIN WIDTH		NLD RUMP WIDTH		-147.613	1.6615	
BSW RUMP ANGLE		NLD RUMP ANGLE		-150.226	1.4876	
BSW FOOT ANGLE		NLD FOOT ANGLE		-133.865	1.1646	
BSW HEEL DEPTH		NLD HEEL DEPTH		-142.336	1.2447	
BSW REAR LEGS SIDE VIEW		NLD REAR LEG SET		-121.280	1.2688	
BSW UDDER DEPTH		NLD UDDER DEPTH		-150.530	1.5696	
BSW MEDIAN SUSPENSORY		NLD MEDIAN SUSPENSORY		-152.253	1.6116	
BSW FORE ATTACHMENT		NLD FORE UDDER		-136.387	1.4141	
BSW TEAT PLACEMENT		NLD FRONT TEAT PLACEMENT		-140.353	1.3977	
BSW TEAT LENGTH		NLD TEAT LENGTH		-121.701	1.1757	
BSW REAR ATTACHMENT HEIGHT		NLD REAR UDDER HEIGHT		-128.098	1.4172	
BSW REAR ATTACHMENT WIDTH		NLD REAR UDDER WIDTH		-122.165	1.3553	
BSW REAR TEAT PLACEMENT		NLD REAR TEAT PLACEMENT		-133.587	1.3916	
BSW ANGULARITY		NLD ANGULARITY		-165.228	1.7660	

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Conversion Factors For Type. Source = INTERBULL MACE 2004  
Converted Canadian Proof = A + (B\* Foreign Proof)  
Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=SVN

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

b	t	n	t	v	v	c
r	r	t	r	a	a	o
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2

BSW CONFORMATION	SVN CONFORMATION	-41.579	0.2826	0.62
BSW DAIRY STRENGTH	SVN OVERALL FRAME	-36.214	0.2631	
BSW RUMP	SVN OVERALL RUMP	-26.208	0.2206	
BSW FEET AND LEGS	SVN OVERALL FEET & LEG	-28.315	0.2215	
BSW MAMMARY SYSTEM	SVN OVERALL UDDER SCORE	-44.923	0.3192	
BSW STATURE	SVN STATURE	-48.471	0.3725	
BSW THURL PLACEMENT	SVN THURL PLACEMENT	-15.751	0.1632	
BSW CHEST WIDTH	SVN CHEST WIDTH	-34.238	0.3474	
BSW BODY DEPTH	SVN BODY DEPTH	-24.304	0.2143	
BSW LOIN STRENGTH	SVN TOP LINE	-27.365	0.2669	
BSW PIN WIDTH	SVN RUMP WIDTH	-28.808	0.2466	
BSW RUMP ANGLE	SVN RUMP ANGLE	-27.688	0.3020	
BSW BONE QUALITY	SVN HOCK QUALITY	-35.374	0.2854	
BSW FOOT ANGLE	SVN FOOT ANGLE	-29.476	0.2499	
BSW HEEL DEPTH	SVN HEEL DEPTH	-24.685	0.2145	
BSW REAR LEGS SIDE VIEW	SVN REAR LEG SET	-26.683	0.2703	
BSW UDDER DEPTH	SVN UDDER DEPTH	-34.152	0.2804	
BSW MEDIAN SUSPENSORY	SVN MEDIAN SUSPENSORY	-35.111	0.2776	
BSW FORE ATTACHMENT	SVN FORE UDDER	-34.456	0.2570	
BSW TEAT PLACEMENT	SVN FRONT TEAT PLACEMENT	-48.371	0.3857	
BSW TEAT LENGTH	SVN TEAT LENGTH	-28.039	0.3187	
BSW REAR ATTACHMENT HEIGHT	SVN REAR UDDER HEIGHT	-45.318	0.3467	
BSW REAR ATTACHMENT WIDTH	SVN REAR UDDER WIDTH	-49.683	0.3868	
BSW REAR TEAT PLACEMENT	SVN REAR TEAT PLACEMENT	-43.875	0.3601	

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 Conversion Factors For Type. Source = INTERBULL MACE 2004  
 Converted Canadian Proof = A + (B\* Foreign Proof)  
 Converted Proof Reliability = TCORR2\*Foreign Reliability

country2=USA

	c	c	f			
	a	o	o			
	n	u	r	a	b	t
b	t	n	t	v	v	c
r	r	t	r	a	a	o
e	a	r	a	l	l	r
e	i	y	i	u	u	r
d	t	2	t	e	e	2

  

BSW CONFORMATION	USA PTA TYPE (FINAL SCORE)	2.302	12.1051	0.72
BSW DAIRY STRENGTH	USA OVERALL FRAME	0.956	3.6270	
BSW RUMP	USA OVERALL RUMP	0.497	6.6077	
BSW FEET AND LEGS	USA OVERALL FEET & LEG	0.277	6.1401	
BSW MAMMARY SYSTEM	USA OVERALL UDDER SCORE	0.896	6.9964	
BSW STATURE	USA STATURE	1.149	3.8273	
BSW THURL PLACEMENT	USA THURL PLACEMENT	-1.724	5.1442	
BSW CHEST WIDTH	USA STRENGTH	1.406	9.2620	
BSW BODY DEPTH	USA BODY DEPTH	1.361	6.1622	
BSW PIN WIDTH	USA RUMP WIDTH	0.935	6.9941	
BSW RUMP ANGLE	USA RUMP ANGLE	-1.074	5.0648	

BSW FOOT ANGLE	USA FOOT ANGLE	1.083	7.9065
BSW HEEL DEPTH	USA HEEL DEPTH	1.142	7.9316
BSW REAR LEGS SIDE VIEW	USA REAR LEG SET	0.180	8.8819
BSW UDDER DEPTH	USA UDDER DEPTH	0.759	5.2085
BSW MEDIAN SUSPENSORY	USA UDDER CLEFT	0.726	6.4181
BSW FORE ATTACHMENT	USA FORE UDDER ATTACHMENT	1.789	5.2117
BSW FRONT TEAT PLACEMENT	USA FRONT TEAT PLACEMENT	0.391	4.9690
BSW TEAT LENGTH	USA TEAT LENGTH	0.021	3.3977
BSW REAR ATTACHMENT HEIGHT	USA REAR UDDER HEIGHT	0.553	5.4376
BSW REAR ATTACHMENT WIDTH	USA REAR UDDER WIDTH	1.091	7.3342
BSW REAR TEAT PLACEMENT	USA REAR TEAT PLACEMENT	1.073	4.4929
BSW ANGULARITY	USA ANGULARITY	1.005	6.6783

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CALCULATION OF FAT% AND PROTEIN% FOR APRIL 2020

BREED	BMILK	BFAT	BPRT
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AYS	7954	332	270
BSW	8543	365	305
CN	6174	262	221
GUE	6981	334	244
JER	6880	354	267
HOL	10563	416	343
MS	7056	274	233

$$\text{EBVFAT\%} = 200 * [ (\text{BFAT} + \text{EBVFAT} * 0.5) / (\text{BMILK} + \text{EBVMILK} * 0.5) - (\text{BFAT} / \text{BMILK}) ]$$

$$\text{EBVPROT\%} = 200 * [ (\text{BPRT} + \text{EBVPRT} * 0.5) / (\text{BMILK} + \text{EBVMILK} * 0.5) - (\text{BPRT} / \text{BMILK}) ]$$

EXAMPLE:

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

$$\begin{aligned} \text{EBVFAT\%} &= 200 * [ (416 + 50 * 0.5) / (10563 + 1000 * 0.5) - (416 / 111E3) ] \\ &= 200 * [ (416 + 25) / (10563 + 500) - (0.03938) ] \\ &= 200 * [ 0.03986 - 0.03938 ] \\ &= 200 * 0.00048 \\ &= 0.10 \end{aligned}$$

$$\begin{aligned} \text{EBVPROT\%} &= 200 * [ (343 + 40 * 0.5) / (10563 + 1000 * 0.5) - (343 / 111E3) ] \\ &= 200 * [ (343 + 20) / (10563 + 500) - (0.03247) ] \\ &= 200 * [ 0.03281 - 0.03247 ] \\ &= 200 * 0.00034 \\ &= 0.07 \end{aligned}$$