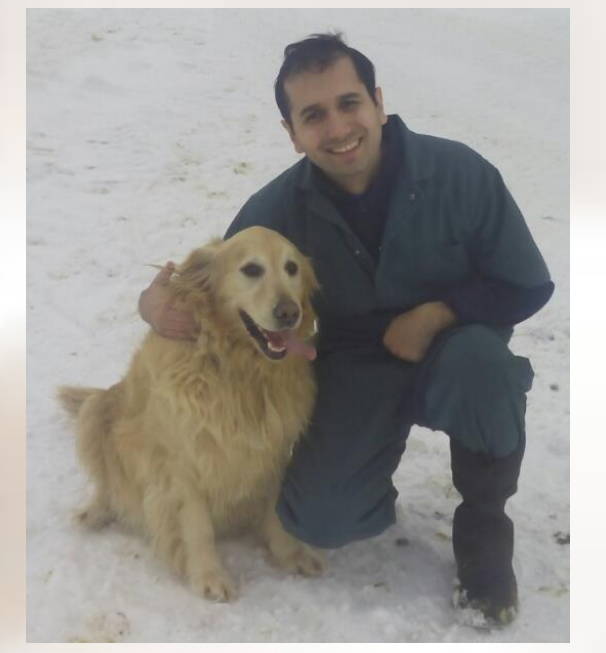


Colostrum Quality: Effect of parity, volume and collection time

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BACKGROUND

- Feeding adequate amount of immunoglobulin G (IgG) during the first hours after birth protect the calf against disease.
- Colostrum with 50 g/L of IgG are considered of high quality.
- IgG can be assessed by using Brix refractometer.
- A Brix value (BV) of 22% corresponds to 50 g/L of IgG in colostrum.
- Objective: To determine the effect of parity, volume and collection time on colostrum quality assessed by a Brix refractometer.

APPROACH

- Colostrum from 117 Holstein cows First (FP; n=39), second (SP ; n=40), and third or greater (MP ; n=38) parity

- Colostrum quality assessment by Brix refractometer.



- Data were analyzed with PROC MIXED, GENMOD and CORR in SAS 9.3.

FINDINGS

Table 1. Mean for volume and BV by parity and collection time

	Sample 1				Sample 2			
	FP	SP	MP	P value	FP	SP	MP	P value
Volume	3.7 ± 0.5	4.5 ± 0.4	4.9 ± 0.5	0.15	5.2 ± 0.4	6.4 ± 0.5	5.8 ± 0.5	0.18
Range	1-10	1-12	1-14		1-10	1-10	2-12	
Brix value	23.9 ± 0.7	24.9 ± 0.6	26.2 ± 0.7	0.05	16.7 ± 0.6 ^a	18.7 ± 0.7 ^b	20.5 ± 0.7 ^b	0.0004
Range	13.7 - 30.7	15.2 - 34.7	18.1 - 34.8		10.8 - 22	8.9 - 26.8	13.3 - 29.6	
% Brix ≥ 22	71.43	87.5	86.4	0.18	10.81 ^a	26.47 ^{ab}	35.48 ^b	0.03

Statistical difference (a,b and ab) was declared at P < 0.05.

- ❑ The proportion of cows with a colostrum ≥ 22% BV in the second collection was greater in older parity cows.

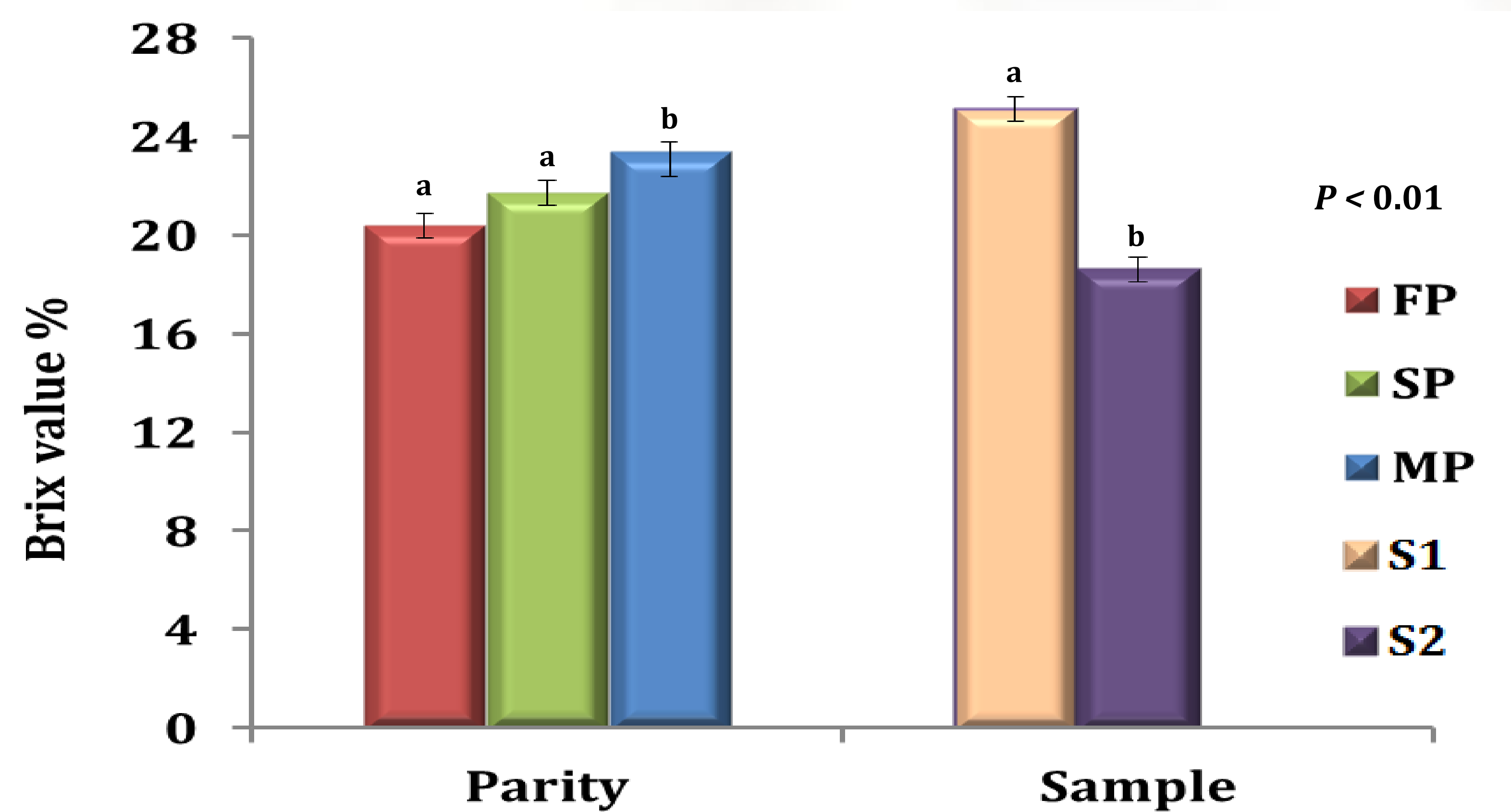


Figure 1. Overall mean for Brix value by parity and sample

- ❑ Older parity cows produced colostrum with higher BV.
- ❑ BV was also affected by collection time, but not by volume.

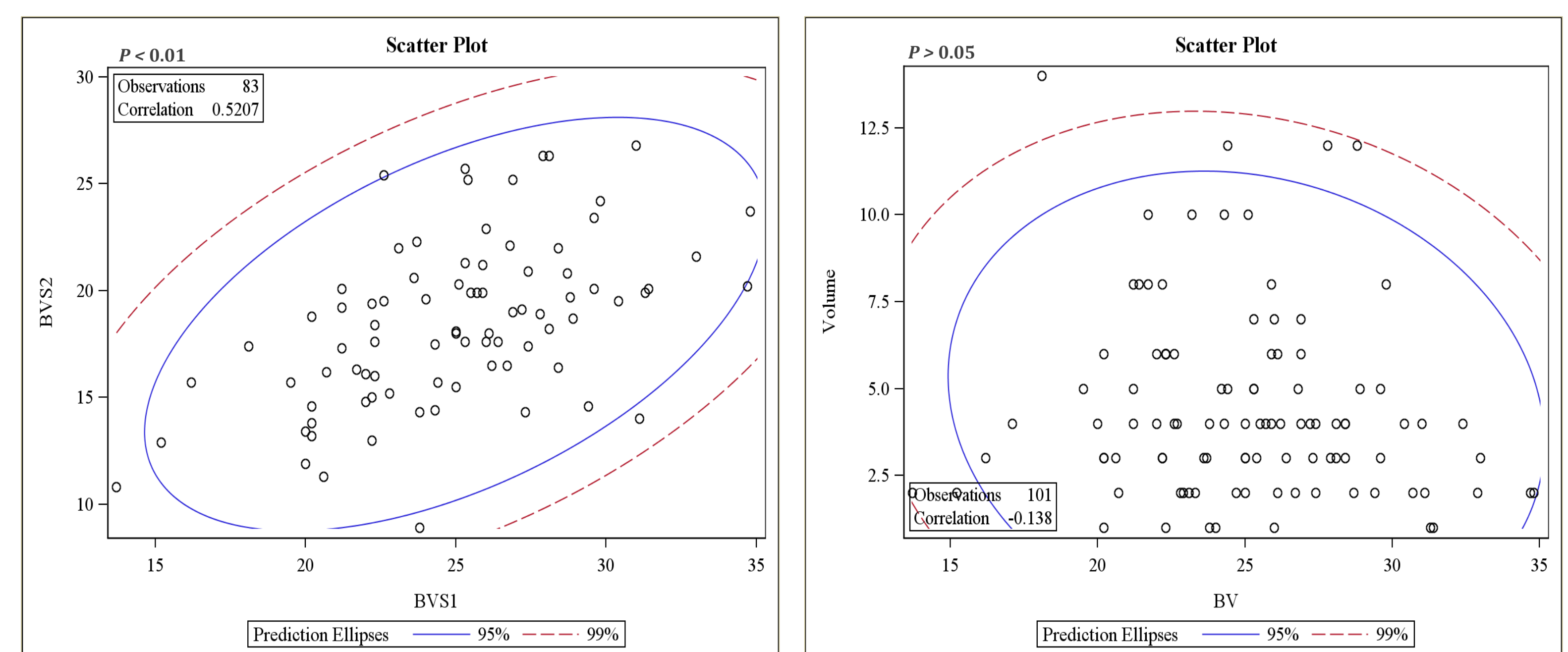


Figure 2. Correlation between Brix values of first and second colostrum samples (BVS1 vs. BVS2) and BV vs. volume

- ❑ Positive correlations were detected between Brix values for sample 1 (BVS1) and sample 2 (BVS2).
- ❑ There was no correlation between Brix values and volume.

SUMMARY

- ❖ Over 70% of the first colostrum samples were high quality regardless of parity.
- ❖ Older parity cows produced higher quality colostrum, especially in a second sample.
- ❖ Volume did not affect colostrum quality.

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