SHEEP MILK QUALITY IN RUCĂR AREA

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Abstract

The study was conducted in 2011 during spring in Rucăr, Romania area in the farm of a ecological farmer.This study research the quality of fresh sheep milk in order to optimised the producing daiery products. Althrough we try to find how parameters of milk are changed during studied period and if this parameters are significant variable. The final results will be integrated in an larger study toghether with the research results regarding the quality of sheep and buffalo milk during studied period.

Key words : sheep milk, milk freezing point, milk conductivity, lactose.

INTRODUCTION

For evaluation the sheep milk quality we study Organolepticall (taste, smel and color) and Physico – chemical parameters (Fat percent, %, Non faty dry matter, %, Protein content, %, Acidity, Tº, Lactose ratio, %, Freezing point, Cº, Mineral content, %, Milk conductivity, mS/cm). Methods used for analysis are according with romanian standards and are quottation in latest studys. The device used was Lactostar from FunkeGerber producer. The sheep milk was colected from the farm of Duruianu Ionut. The milk was colected from 332 sheeps, Turcana breed. The milk was colected in the morning and the sheeps was in free stabulation on the hill pasture without fertilisation and without suplimentary feed.

MATERIALS AND METHODS

Taking samples: We use to take samples glass probes. From serface and upper layers samples was taken with cilindrical probes after homogenisation. Procedure was according to S.TA.S. 9535/1-74 and STA.S. 9535/2-74.

1.Organoleptical analysis: Was study colour, aspect, smell and taste of milk according with Georgescu Gh., 2005. If those parameters was out of normal range milk was considered out of standards and study of those samples was ended.

2.Physical analysis : We study follow parameters : fat percent, non faty dry matter, protein content, acidity, lactose ratio, freezing point, mineral content and milk conductivity.

We use the LactoStar device from Funke Gerber with following parameters :

Table 1. LactoStar parameters

Constituents	Disolving	Repetability
Fat	0,01 %	+0,02%
Protein	0,01 %	+0,03%
Lactose	0,01 %	+0,03%
SNF (nonfaty dry matter)	0,01 %	+0,04%
Freezing point	- 0,001 ºC	+0,02%
Mineral content	0,01 %	+0,02%
Conductivity	0,01 %	+0,02%

3. Experimental Methodic

Samples was study according following schema :

V_1 – 11 May; V_2 – 12 May; V_3 – 13 May ; V_4 – 14 May, V_5 – 15 May, V_6 – 16 May, V_7 – 17 May, V_8 – 18 May, V_9 – 19 May, V_{10} – 20 May, V_{11} – 21 May, V_{12} – 22 May.

4. Biological material

We study milk colected from 332 sheeps, Turcana breed from Rucăr area, farm of Duruianu Ionuț.

5. Statistics methodic

We use ANOVA statistic tests for data processing.

RESULTS AND DISCUSSION

1.Organoleptical analysis:

Colour, Aspect, Smell and Taste was according with standards and was no deviation from this point of wiew.

2.Physical analysis :

Table 1. Fat percent, %

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	Fat percent	7,10	7,21	6,72	7,01	6,91	7,03	7,12	7,10	6,92	6,99	7,11	7,26

The fat percentage was in the normal range of sheep milk, close to the minimum value. The minimum was a consequence of the periode and because the lack of suplimentary feeds during the week.

Table 2. Non faty dry matter, %

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	SNF, %	12,16	12,23	12,34	12,45	12,65	12,45	12,76	12,45	12,37	12,33	12,18	12,43

The SNF is at the lower rates because of the maximum production of milk. That reveal the low value of the milk colected in this periods and it will be not very valuable for chees production.

Table 3. Protein content, %

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	Protein content, %	4,59	4,50	4,65	4,32	4,51	4,36	4,44	4,71	4,62	4,53	4,66	4,56

The protein content have high rates becase of the presence of lambs in this time and for this reason the milk will be very good for dairy products.

Table 4. Acidity, Tº

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	Acidity, Tº	27	25	31	28	30	25	24	19	19	19	21	28

The milk was fresh, the acidity reveal that the milk was analized after milking and is suitable for processing.

Table 5. Lactose ratio, %

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	Lactose ratio, %	6,59	6,64	6,43	6,23	6,31	6,44	6,52	6,54	6,63	6,62	6,57	6,48

High ratio of lactose are the consequence of the green feeds and the active methabolism of the sheeps.

Table 6. Freezing point, Cº

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	Freezing point, Cº	-0,706	-0,702	-0,714	-0,708	-0,702	-0,709	-0,714	-0,712	-0,701	-0,700	-0,704	-0,720

Freezing point is normal and reveal that are no falsifications of the milk.

Table 7. Mineral content, %

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	Mineral content, %	0,82	0,79	0,78	0,79	0,81	0,84	0,83	0,82	0,86	0,84	0,83	0,84

Mineral content is very high at the maximum level for sheep milk because of the feeding with fresh grass.

Table 8. Milk conductivity, mS/cm

No.	Sample	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
1	milk conductivity, mS/cm	34,65	34,59	34,61	34,53	34,45	34,60	34,58	34,61	34,61	34,49	34,59	34,61

The milk conductivity reveal that was no exogen NaCl inside, the milk is authentic and there are no falsifications.

CONCLUSIONS

We use the high-tech Lacto Star electronic milk analyzer for basic physical – chemical parameters. The device was connected to a printer and was also connected to a portable personal computer for a better and quick feedback of the milk quality management.

The analyzed milk sown high contents in valuable components. The high content in lactose and proteins the milk analyzed is the best row material for acid dairy products. That and the other compounds – not shown in this study - improves the organoleptical parameters like taste, flavor and viscosity.

The high content in proteins recommends the milk also for cheese production.

Milk freezing point is at levels that reveal the absence of foreign substances.

The milk conductivity reveal that was no exogen NaCl inside, the milk is authentic.

The analyzed milk had all parameters in normal range at the high levels, proper for dairy products.

There was no significant diferences in the values of analyzed parameters.

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