

## MILK PRODUCTION OF SVRLJIŠKA STOCK OF DOMESTIC TUFT SHEEP<sup>1</sup>

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**Abstract:** Milk production of sheep is tight connected with condition of production in particular country. Sheep milk by chemical content, biological and technological values is worth raw material for adaptation and direct use.

Milk of sheep belong to casein type in participation of casein in total albumen amount by 75% or higher than 75%. Because of that, milk of sheep, like casein sort it is very important in diet and with excellent technological characteristic is used in milk industry. Total production in our country is amounted to 27 million litres, and per sheep 46 kg which is unsatisfactory.

Milk yield of sheep depend of more factors and the important are: genetic base, conditions of diet, breeding conditions form medical protection. On quantity milk in the lactation process, significant influence have growing of sheep and type of born lambs.

Milk production of Svrljig stock of domestic tuft sheep including six farmers, was presented in this paper. It is stated that average duration of lactation was 164.8 days, milk yield 128.2 kg, average daily milk yield 0.78 kg, and milk fat content 6.54%.

According to the obtained results, it is concluded that Svrljig stock of domestic tuft sheep has shown emphasized milk production which by using updated breeding and selection methods can be significantly improved.

**Key words:** Svrljig stock of domestic tuft sheep, milk production, fat content.

### *Introduction*

Milk and milk products represent one of the basic foods in the feeding of populations. Many of studies point on favourable effect of these products intake on children and adolescents, and on health condition. The data from laboratory studies have shown potential healthy characteristics of fermented milk. Further investigations have proved this analysis on volunteers and selected groups of patients (*Ristić, G., et. al.* - 1999, and *Obradović, D.* - 2000).

Milk of sheep like milk of other kinds of domestic animals (goats and cows) belong to casein types in which content of casein in total protein amount (casein index) is 75% or higher. Milk of ware in some countries is also used for human feeding. This kind of milk has casein number lower than 65%. Milk of sheep is suitable for milk industry because of very good technological characteristics (*Mekić et. al.* - 1995).

Sheep milk is used for production of very qualitative cheese, which can be considered as delicious. Some types are following: kačkavalj (kachkaval), njeguš white cheese, sombor white cheese, kajmak (milk fat), urda.

In our country, production of high graded cheeses and creams are very well known (*Mekić et. al.* - 2000). Very tasty sour milk and yogurt are also produced. Beside that, milk of sheep used to be mixed up with milk of cows in order to produce different kinds of products which are valuable and satisfy the tasted of numerous consumers.

In mountain regions traditional in production of cheese exists (Parrot, Seneca, Dormitory cheese, etc.).

At the mentioned regions local types of domestic tuft sheep with triple productive capabilities (meat -milk -wool), are raised.

The goal of this paper was to present basic productive parameters of Svrljig stock of domestic tuft sheep on individual producers' properties.

<sup>1</sup> Original scientific paper

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### Material and Methods

In order to establish duration of lactation, milk yield and milk fat content, milk controls have been done every 30 days. Daily milk yield is obtained by summation milk yields in morning and evening milking.

Milk yield control was performed on the sample of 130 Svrlijig domestic tuft sheep, including six individual agricultural producers (Stojanović Vukosav 10 individuals; Radosavljević Ranko 20; Mitić Dobrica 20; Vučković Ranko 30; Zdravković Dobri 40 and Ivić Živojin 10 individuals).

Basic analysis of obtained data was performed using ordinary methods of mathematical statistics. The level of significance between breeders was stated by analysis of variance. Differences between average values were done and tested using t-test.

### Results and discussion

Average duration of lactation period was for whole population in average 164.8 days with absolute variations from 130 to 199 days (Table 1.).

Table 1. Average values and variability of lactation period (days)

Groups of ewes*	Parameters					Variations	
	n	$\bar{x}$	$S_{\bar{x}}$	SD	CV%	Min.	Max.
I	30	151,47	2,03	11,09	7,32	131	179
II	40	173,35	1,31	8,28	4,78	164	199
III	20	165,05	3,23	14,44	8,75	148	194
IV	20	171,15	1,79	7,99	4,67	157	181
V	10	163,30	5,49	17,34	10,62	153	199
VI	10	159,30	3,64	11,49	7,21	130	169
Total/Mean	130	164,85	1,21	13,83	8,39	130	199

\* Breeders: I - Vučković Ratko; II - Zdravković Dobri; III - Mitić Dobrica;  
IV - Radosavljević Ranko; V - Stojanović Vukoslav and VI - Ivić Živojin

Milkability of sheep depend on many factors which can be defined as more important race capability, individual characteristics, number of lambs at birth, lactation order etc.

Table 2. Average values and variability of milk yield (kg)

Groups of ewes*	Parameters					Variations	
	n	$\bar{x}$	$S_{\bar{x}}$	SD	CV%	Min.	Max.
I	30	123,1	2,41	13,22	10,74	97,9	144,4
II	40	126,2	1,41	8,90	7,05	113,6	154,4
III	20	138,6	2,13	9,54	6,88	123,7	162,0
IV	20	128,8	1,92	8,60	6,68	117,6	155,3
V	10	130,2	2,67	8,45	6,49	118,9	147,4
VI	10	124,3	3,24	10,25	8,25	106,9	138,9
Total/Mean	130	128,2	0,96	11,01	8,59	97,9	162,0

From table 2 it can be stated that average milk production was 128.2 kg with variations from 97.9 to 162.0 kg. Higher production was on the property III – 138.6 kg. In relation to first group milk yield in third group was higher by 15.5 kg (12.6%). This difference was statistically high significant ( $P < 0.01$ ). Difference between third and fourth group was 14.4 kg (11.5 %), and third and second group 12.4 kg (9.8%). These differences were also statistically high significant ( $P < 0.01$ ). Average daily milk yield was around 0.8 kg.

In the literature which is concerned of sheep milkability, all differences were depended from race, raising conditions, age of sheep and many other influences. Mitić (1984) was quoted average milk yield of

78.7 kg for lactation period of 180 days, with average daily milk yield of 0.41 kg. Trojić (1953) was quoted average milk yield of 71.2 kg for lactation period of 188 days. In investigations of Mekić, et. al. (2000), milk yield was in average 74.1 kg and daily yield 0.41 kg. Average milk yield in east – Friesian race was 113.7 kg (daily yield 0.63 kg) and F<sub>1</sub> crosses (Svrljig stock x Friesian) 108.3 kg (daily yield 0.60 kg).

Contrary to literature data, these results are significantly higher because lactation milk production is calculated and shown including milk quantity which suckled during suckling period.

High variability in milk production quoted in this paper also represent good basis for further improvements of whole population. Average milk fat content was 6.54% (table 3). The lowest percent was at producer V-5.78% and III - 6.25%. However, these producers have produced the highest milk yields.

Table 3. Average values and variability of milk fat percentage for whole lactation

Groups of ewes*	Parameters					Variations	
	n	$\bar{x}$	$S\bar{x}$	SD	CV%	Min.	Max.
I	30	6,73	0,03	0,19	2,82	6,40	7,10
II	40	6,78	0,03	0,19	2,80	6,40	7,20
III	20	6,25	0,06	0,28	4,48	5,60	6,70
IV	20	6,37	0,06	0,27	4,24	6,00	7,00
V	10	5,78	0,13	0,42	7,27	4,80	6,30
VI	10	6,63	0,09	0,30	4,52	6,20	7,10
Total/Mean	130	6,54	0,03	0,38	5,81	4,80	7,20

Having in mind that correlation between milk yield and milk fat content is negative, obtained differences could be in the function of high milk production at Svrljig stock of domestic tuft sheep populations.

In the same stock of domestic tuft sheep Mitić (1984) established milk fat content of 6.95%, Živanović (1988) – 7.32% and Mekić, et. al. (2000) – 7.66%.

#### Conclusion

According to the investigated results, next conclusions can be drawn:

1. Including all groups of sheep, duration of lactation was 164.8 days.
2. Average milk yield was 128.2 kg, with absolute variations from 97.9 to 162.0 kg. The highest milk production was 138.6 kg on farm number III.
3. Average daily milk yield for whole lactation was 0.78 kg. This result has directly influenced on total milk yield.
4. Average milk fat content was 6.54%.

The general conclusion would be that Svrljig stock of domestic tuft sheep have genetic disposition for high milk production in relation to other stocks of domestic tuft sheep, which are raised in Serbia and Monte Negro.

Variation of milk yield from 97.9 to 162.0 kg, shows heterogeneity of whole population. By the improving raising conditions and selection, there are exists many opportunities for creating much more productive subpopulations in sheep with high much milkability. That aim is of great interesting of breeders in the region.

## PROIZVODNJA MLEKA KOD SVRLJIŠKOG SOJA PRAMENKE

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Proizvodnja ovčijeg mleka usko je povezana sa stanjem ovčarstva u jednoj zemlji. Ovčije mleko po hemijskom sastavu, biološkim i tehnološkim vrednostima veoma je vredna sirovina za preradu i direktnu upotrebu.

Ovčije mleko spada u kazeinske vrste mleka, u kojima učešće kazeina u ukupnim belančevinama (kazeinski indeks) iznosi 75% ili je veći od 75%. Zbog toga, ovčije mleko, kao kazeinska vrsta mleka veoma je značajna u ishrani i zbog izvanrednih tehnoloških osobina koristi se u mlekerskoj industriji. Ukupna proizvodnja ovčijeg mleka u našoj zemlji iznosi 27 miliona litara, a po ovci 46 kg, što je nezadovoljavajuće.

Mlečnost ovaca zavisi od više faktora a najznačajniji su: genetska osnova, uslovi ishrane, držanja i zdravstvene zaštite. Na količinu mleka u toku laktacije ima značajnog uticaja uzrast ovaca i tip rodene jagnjadi.

U radu je praćena proizvodnja mleka kod svrljiškog soja pramenke i to kod šest poljoprivrednih proizvođača. Utvrđeno je, da je prosečno trajanje laktacije iznosilo 164,85 dana, količina namuženog mleka 128,2 kg, prosečna dnevna količina mleka bila je 0,776 kg, a sadržaj mlečne masti bio je 6,54%.

Na osnovu dobijenih rezultata možemo konstatovati, da svrljiški soj pramenke ima naglašenu proizvodnju mleka, koja se uz primenu savremenih selekcijskih zahvata može značajno unaprediti.

*Ključne reči:* svrljiška pramenka, proizvodnja mleka, sadržaj mlečne masti.

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