

## TECHNOLOGICAL ASPECTS OF MILK PRODUCTION IN ROMANIAN BLACK SPOTTED BREED

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### Abstract

Milk is the product of mammary glands with increasing role in feeding and products. Thanks to the farmers by selection, matching pairs of breeding cattle milk production reached more than necessary for rearing calves. Difference in addition, 80-90% is used as aliment. In body regarding specific factors on which cow milk production quantity and quality, we consider a number of factors which are characteristic of each body and transmitted from one generation to another, by hereditary, in varying degrees. Race which influences the quality and quantity of milk production due to specific capacity knowing that each race has a certain standard. Individuality is the result of individual variability in livestock systematic and fall within certain limits for each race. Physiological type that fits each cow, especially with a nervous, circulatory, respiratory and digestive respect can lead to a variation between very wide limits of quantitative and qualitative milk production. Maintenance status influences both quantitative cows and milk quality. It is estimated that the highest yield and good quality is obtained from cows with a state of proper maintenance breeding condition. Aim is to identify technological aspects of growth, maintenance, feeding and milk production of cows on the farm SC. AGROZOOTEHNICA S.R.L. Therefore we conducted a study that took an actual observation of 20 dairy Romanian black spotted breed (Bălțată cu Negru Românească - BNR) and milk production derived from them within a week.

**Keywords:** dairy cows, milk production, cow maintenance, feeding, lactation, average milk production.

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### 1. INTRODUCTION

Bovine growth is a branch of prime importance to world agriculture, due to the volume, diversity and value of production and products are obtained in this work. Milk is a complete food, essential in infants, the elderly, pregnant women and nursing, convalescent and the staff working in toxic environments (Dinescu, Badea, 2001).

### 2. MATERIAL AND METHODS

The population of Romanian black spotted breed (Bălțată cu Negru Românească - BNR) was approved as a breed in its own right in 1987 (MO no.125/1987) (Figure 1). Productive morphological type of race is milk. Development body race is high on average cows showing a waist 128-133 cm and a body weight of 550-650 kg. Body format is part of a large base trapeze oriented towards the rear. The constitution is being fine-sturdy specific specialized breeds for milk production. Udder

is well developed with good for mechanical milking. Temperament is brisk. Coat color is as the name suggests Spotted black and white, black and white spots with a variable distribution on the body. The breed has good skills for milk production on average is 8000-10000 kg. Race has among other advantages and speed release considerable milk, ie 1,8 kg / min. Milk has an index of 45% and a constant index of 80%. Consumption of food is from 1,07 to 1,17 UNL / kg milk. BNR race and perform well in terms of meat production, intensive fattening youth making a average daily gain (SMZ) of about 900 g / day with a specific consumption of about 7,45 UNC, and for semi-intensive fattening average increase conducted daily aprox. is 750 g / day with a specific consumption of between 7,8 to 8,6 UNC per kg weight gain. . Slaughter yield is about 53%. Age at first calving is located around the age of 26-28 months. Organoleptic qualities of meat from BNR race are inferior races Brown of Maramureș and Romanian Spotted.



Fig. 1 BNR on the farm [11]

The main objectives in the improvement of the breed are increasing waist, body weight, milk production potential, reducing specific consumption and improving skills for mechanical milking (Creta, Morar, Culea, 1995).

#### *Maintenance systems of cows on the farm*

In practice, joint maintenance of cows is characterized by alternating periodic maintenance to maintain non dairy cows related to housing. After periods of alternation of the two systems and where maintenance is unrelated cows, maintaining joint has two variants:

- alternating daily maintenance related and unrelated cows
- seasonal alternation maintenance related and unrelated cows (Ujică, Maciuc, Nistor, 2007).

#### *Feeding cows on the farm*

Organization of fodder farm, seen in terms of developing the production plan involves solving the following issues: one optimize feed rations, one determination of feed, one plan preparation and balances forage crop. Taking into account one source of food assurance requirements should be developed two scales fodder balance at the beginning of the plan, to plan and balance harvest from harvest until next year's harvest (Stoica, 1997).

#### *Milking cows on the farm*

In terms of specific factors on which body cow milk production quantity and quality, we consider a number of factors which are characteristic of each body and transmitted

from one generation to another, by hereditary, in varying degrees.

*Race*, which influences the quality and quantity of milk production due to specific capacity, knowing that each race has a certain standard.

*Variety and family line* that includes farmed cows affects both the quantity and quality of milk produced. In some breeds are those subdivisions, including small and large populations of cattle and have some productive capacity, which should be taken into account (Stanciu, 1999).

*Individuality* is the result of individual variability in livestock systematics and fall within certain limits for each race.

*Physiological type* that fits each cow, especially with a nervous, circulatory, respiratory and digestive regard can cause a very wide range of variation between quantitative and qualitative milk production. *Age cow* has a clear influence on milk production capacity, knowing that during the production life is not uniform (Georgescu, Mărginean, Petcu, 2007).

*Body weight of cows* is directly related to milk production traits between these two there is a positive correlation up to a certain limit, considered optimal weight.

*Heat* to adversely affect milk production cows. During the heats, the animals are restless, not entirely consumed ration and consequently decreases the quantitative milk production.

*Lactation* has a direct influence on milk production. The higher lactation, the milk yield per lactation will be higher. However, lactation should not exceed more than 305 days, because in this case will decrease milk production per cow whole life (Georgescu, Stanciu, Velea, Ujică, 1990).

*Maintenance status* influences both quantitative cows and milk quality. It is estimated that the highest yield and good quality is obtained from cows with a state of proper maintenance breeding condition. *Health* of cows largely determines milk production.

**Table 1. Ration feed, dairy category 20 kg (Farm data)**

Specifications		SU	UN	UNL	PD	PDIN	Ca	P
Rules		18.00	16.20	15.60	1620.00	1442.00	95.00	75.00
Specifications	Quant. kg	SU	UN	UNL	PD	PDIN	Ca	P
Corn silage	15.00	3.90	3.00	3.15	165.00	195.00	18.00	7.50
Alfalfa hay	7.00	6.09	3.71	4.48	735.00	651.00	70.00	13.30
Beer dregs	7.00	1.37	1.33	0.98	252.00	210.00	7.00	4.20
TOTAL	29.00	11.36	8.04	8.61	1152.00	1056.00	95.00	25.00
DEFICIT		6.65	8.16	6.99	468.00	386.00	0.00	50.00
Maize grain	3.00	2.64	4.02	3.81	195.00	219.00	0.60	6.90
Barley grain		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sunflower cake	1.00	0.90	0.83	0.78	315.00	226.00	4.00	10.00
Soybean cake		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wheat bran	3.00	2.64	2.25	2.52	354.00	303.00	4.20	30.00
TOTAL	7.00	6.18	7.10	7.11	864.00	748.00	8.80	46.90
TOTAL	36.00	17.54	15.14	15.72	2016.00	1804.00	103.80	71.90

**Table 2. Ration feed, dairy category 30 kg (Farm data)**

Specification		SU	UN	UNL	PD	PDIN	Ca	P
Rules		21.00	21.20	20.40	2220.00	1942.00	125.00	95.00
	Quant. kg	SU	UN	UNL	PD	PDIN	Ca	P
Corn silage	22.00	5.72	4.40	4.62	242.00	286.00	26.40	11.00
Alfalfa hay	6.00	5.22	3.18	3.84	630.00	558.00	60.00	11.40
Beer dregs	8.00	1.56	1.52	1.12	288.00	240.00	8.00	4.80
TOTAL	36.00	12.50	9.10	9.58	1160.00	1084.00	94.40	27.20
DEFICIT		8.50	12.10	10.82	1060.00	858.00	30.60	67.80
Maize grain	4.00	3.52	5.36	5.08	260.00	292.00	0.80	9.20
Barley grain	3.00	2.64	3.60	3.39	210.00	195.00	5.40	11.40
Sunflower cake	3.00	2.70	2.49	2.34	945.00	678.00	12.00	30.00
Rapeseed meal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wheat bran	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	10.00	8.86	11.45	10.81	1415.00	1165.00	18.20	50.60
TOTAL	46.00	21.36	20.55	20.39	2575.00	2249.00	112.60	77.80

As regards the *environmental and operational factors*, there are specific within the natural environment and artificially influence on milk production of cows in a variable, as follows:

*Food-in* connection with the food, so feeding too heavy, and the lack or poor, negative impact on milk production of cows.

*Watering* directly affect milk production, particularly by the amount of water provided. The watering is done more often, the milk production increases (Stoica, 1997).

*Milking cows* done in a short time and energetic, intensely paced, positive influence on milk production, in that they get the full amount secreted by that time.

**Tabel 3. Average milk production of dairy cows of 20 (Farm data)**

DCN	Lactation (l)					Average on 7 days		
	1 day	2 day	3 day	4 day	5 day	6 day	7 day	
1	43.4	21.4	29.9	37.2	35.0	31.1	22.2	31.45
2	30.7	21.1	33.2	38.5	35.4	33.9	28.6	31,62
3	30.9	19.8	27.8	30.3	24.8	24.8	25.9	26,32
4	36.5	18.0	37.3	28.9	23.9	30.3	30.0	29,27
5	33.4	17.0	33.0	31.8	31.5	30.0	25.3	28,85
6	18.4	16.8	30.5	26.2	26.7	30.8	31.8	25,88
7	28.5	16.7	29.1	30.9	29.6	29.8	31.4	28,00
8	32.1	16.7	30.9	26.6	29.5	22.9	28.2	26,70
9	26.2	16.6	31.6	29.9	32.8	32.9	26.8	28,11
10	27.2	16.3	27.2	29.2	24.9	26.2	30.7	25,95
11	28.7	16.2	30.9	30.1	15.6	26.7	30.0	25,45
12	26.7	16.1	14.2	32.6	26.9	23.7	27.0	23,88
13	31.5	16.1	14.7	36.2	27.6	28.8	27.5	26,25
14	35.5	16.0	35.3	29.1	27.0	32.5	28.1	29,07
15	31.1	15.7	32.3	33.1	31.4	37.4	27.0	29,71
16	22.9	15.5	29.7	30.9	32.2	27.8	29.1	26,87
17	31.9	15.4	26.0	26.9	28.2	28.6	31.2	26,88
18	31.9	15.2	31.0	30.2	31.5	28.4	30.0	28,31
19	29.4	14.7	19.2	32.5	30.9	36.9	29.8	27,62
20	25.2	14.7	29.3	23.2	28.5	28.3	29.7	25,55

\*DCN – dairy cow number

*Cows body care* influences all body functions, and hence on milk secretion, resulting in higher production and quality.

*Climate* by its factors of temperature, humidity and air pressure affect the quantitative and qualitative obtained from cows. The most favorable climate for dairy cows is considered the temperate (Stanciu, 1999).

### 3. RESULTS AND DISCUSSION

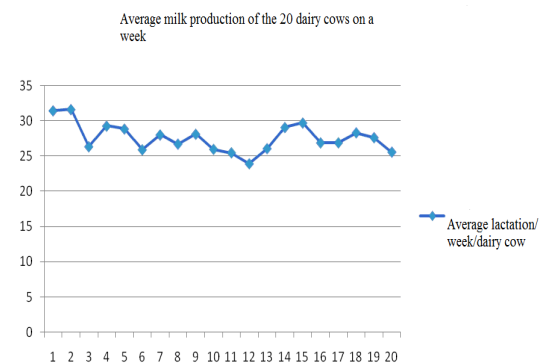
As a result observation of milk cows in the study for one week will be highlighted in Table 3 the average milk yield as follows:

The chart in the Figure 2 is the average milk yield of the 20 cows studied for a week.

After the study we observed that the number 2 is the average cow milk production most because it has 138 days of lactation.

The next cow with a lower average production is cow number 1, with 117 days of lactation. Average milk production is different depending

on each cow separately and the number of days of lactation.



**Fig. 2 Average milk yield of the 20 cows studied for a week (Farm data)**

### 4. CONCLUSION

The results obtained, two cows had the highest average production of milk, because milk 7 day average is 31.62 l it the same system as the rest of feeding dairy cows in the study.

Depending on the number of days of lactation is affected and the average yield of the 20 cows studied.

The maintenance of cows influences milk production due to alternating daily maintenance related and unrelated cows, and cows maintenance of seasonal alternation bound and unbound.

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