

# STUDY OF ROMANIAN YELLOW SPOTTED BREED PRODUCTIVE PERFORMANCES FROM BISTRIȚA-NĂȘĂUD COUNTY

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## Abstract

*This research aims to highlight the main productive traits in cattle raised for milk production in Bistrita-Nasaud county, while Romanian Spotted breed has the largest share with Romanian Black Spotted breed. A number of 7399 milk cows were taken into research which produced a total of 24508 lactations. Production and reproduction data were obtained through the official control of milk production, the existing databases at UARZ units (origin, reproduction and production) from the named county and there were taken, processed and statistically interpreted. The variability of milk production at Romanian Spotted breed in Bistrita-Nasaud holdings was very pronounced, with a range between 584 kg and 10.400 kg milk, with an average length of service of four lactations and birth rate that is at 85.78%.*

**Key words:** Romanian Yellow Spotted breed, milk production, evolutions

## INTRODUCTION

Romania's agricultural potential is a solid premise but insufficient to achieve a competitive agriculture. This potential must be found into productions level, their quality, has to be reflected into a healthy rural environment and competitive with the one existing in the European Union countries.

Can't conceive modern livestock without the milk cow, but this has to be raised and exploited in optimal conditions, based on rational and efficient technologies, in full agreement with genetics and management[1].

One of the most difficult problem the breeders are facing is the functional parameter setting of holdings and their production capacity [2].

In Bistrita-Nasaud county regarding the evolution of milk cows and the total production of milk in the last few years, is recording a slight decrease in number, while the individual average milk production is increasing.

## MATERIAL AND METHOD

The research took place between 2008 and 2012 and focused on the one hand on the

entire effective of milk cows exploited in the county and on the other hand over the biological material of Romanian Spotted breed, breed that has the largest share.

A number of 7399 milk cows were taken into research which produced a total of 24508 lactations. For the analysis of production performance of Romanian Spotted breed dairy cows in the herd a number of 24508 successive lactations were followed. Production and reproduction data were obtained through the official control of milk production, the existing databases at UARZ units (origin, reproduction and production) from the named county and there were taken, processed and statistically interpreted.

## RESULTS AND DISCUSSIONS

From the quantitative production analysis of milk per lactations, we can see that the highest yield is recording in the first lactation and has an average value of 3753 kg milk for normal lactation and 4350 kg for total lactation.

Lactation curve has a descending trend, with a maximum in the first lactation, then decreases gradually reaching at the fifth lactation an average of 3483 kg milk per normal lactation and 3909 kg milk per total lactation.

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The manuscript was received: 25.03.2013

Accepted for publication: 22.09.2013

Table 1 Average values and estimates of variability for production traits according to lactations, for the cow population from Bistrita-Nasaud county

Lactation	Statistics	Total lactation					Normal lactation				
		Duration	Milk	Fat	Fat	Protein	Duration	Milk	Fat	Fat	Protein
		(days)	(kg)	(kg)	(%)	(%)	(days)	(kg)	(kg)	(%)	(%)
L <sub>1</sub> n = 7399	$\bar{X}$	360.39	4350.25	175	3.99	3.49	293.25	3753.67	148.89	3.94	3.43
	$\pm s \bar{X}$	1.59	31.45	1.34	0.00	0.01	0.31	23.69	1.00	0.00	0.01
	S	108.08	2137.61	91.04	0.32	0.31	21.14	1610.37	68.06	0.30	0.28
	V%	29.99	49.14	52.03	7.94	8.90	7.21	42.90	45.71	7.71	8.28
L <sub>2</sub> n = 4482	$\bar{X}$	347.24	4145.23	164.89	3.95	3.47	291.81	3653.85	143.82	3.91	3.42
	$\pm s \bar{X}$	1.45	29.04	1.23	0.00	0.01	0.33	22.27	0.94	0.00	0.01
	S	97.05	1944.40	82.10	0.31	0.29	22.36	1490.92	63.23	0.30	0.27
	V%	27.95	46.91	49.79	7.82	8.28	7.66	40.80	43.97	7.65	7.99
L <sub>3</sub> n = 4176	$\bar{X}$	340.60	3965.77	156.65	3.93	3.44	290.72	3552.61	139.03	3.89	3.40
	$\pm s \bar{X}$	1.46	25.89	1.10	0.00	0.01	0.35	20.35	0.87	0.00	0.01
	S	94.18	1673.14	70.91	0.30	0.27	22.93	1315.24	56.03	0.29	0.26
	V%	27.65	42.19	45.26	7.56	7.79	7.89	37.02	40.30	7.48	7.53
L <sub>4</sub> n = 3503	$\bar{X}$	342.06	3923.37	154.75	3.92	3.45	291.32	3512.05	137.08	3.88	3.40
	$\pm s \bar{X}$	1.63	26.67	1.13	0.00	0.01	0.38	21.03	0.89	0.00	0.01
	S	96.34	1579.15	67.02	0.29	0.27	22.57	1245.27	52.70	0.28	0.25
	V%	28.17	40.25	43.31	7.51	7.77	7.75	35.46	38.45	7.26	7.34
L <sub>5</sub> n = 2750	$\bar{X}$	344.18	3909.98	154.38	3.93	3.46	291.53	3483.46	135.98	3.89	3.40
	$\pm s \bar{X}$	1.88	29.41	1.26	0.01	0.01	0.44	22.45	0.96	0.01	0.01
	S	98.46	1542.45	66.17	0.30	0.26	23.20	1177.18	50.23	0.30	0.24
	V%	28.61	39.45	42.86	7.71	7.49	7.96	33.79	36.94	7.62	7.11
Average n = 24508	$\bar{X}$	345.67	4017.36	159.47	3.94	3.46	291.48	3562.02	139.80	3.91	3.41
	$\pm s \bar{X}$	0.63	11.24	0.48	0.00	0.00	0.14	8.63	0.37	0.00	0.00
	S	98.66	1759.59	74.79	0.31	0.28	22.59	1350.89	57.31	0.30	0.26
	V%	28.54	43.80	46.90	7.75	8.07	7.75	37.92	40.99	7.57	7.66

The variability of individual milk production is high,  $V\% > 37$ , the maximum individual yield being 21311.30 kg recorded in the second lactation and the minimum individual yield of 584 kg recorded in the third lactation (per total lactation). In terms of quality, the milk content in fat per total lactation varies between 3.92%, average recorded in the fourth lactation and 3.99% average recorded in the first lactation.

The protein content per total lactation is recording averages between 3.44% in the third lactation and 3.49% in the first lactation.

On normal lactation the averages of fat percentage varies between 3.88% and 3.94%

and of protein percentage between 3.40% and 3.43%.

The duration in days of total lactation is on average 345 days on all lactations recording the highest average in first lactation, that is 360 days and the lowest average of 340 days in third lactation (Table 1). When referring to the duration in days of the normal lactation it is on average 291.48 days, with the highest average in first lactation, 293.25 days. The herds studied from this county are very homogeneous regarding to this index, the calculated coefficient of variation being 7.75%.

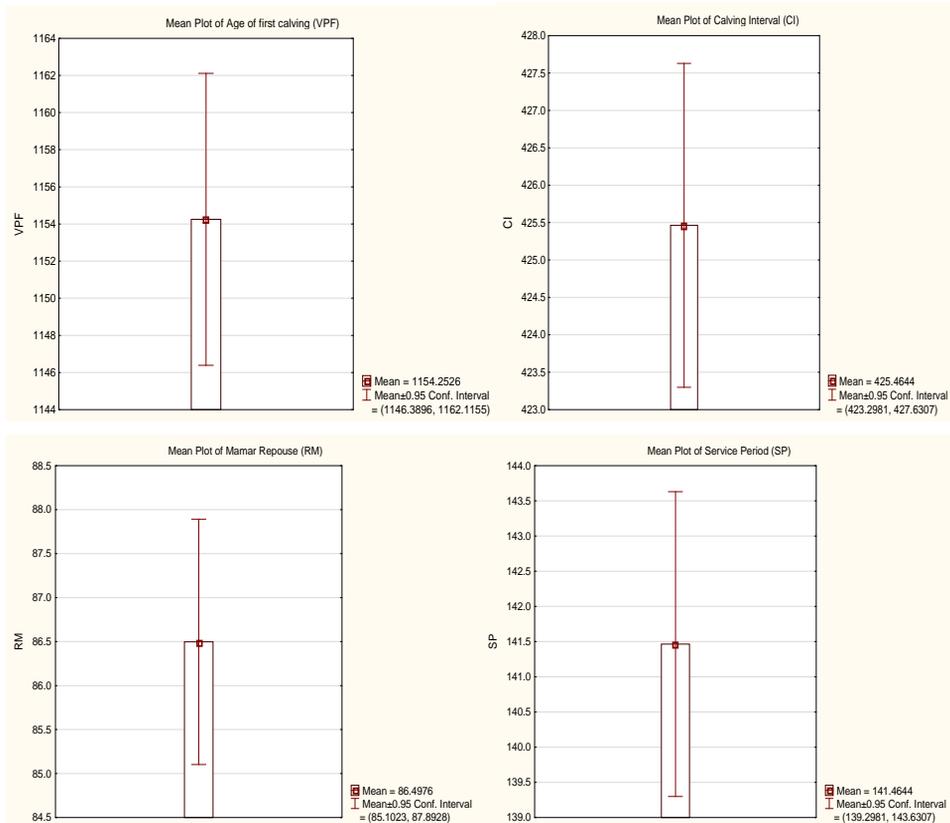


Fig. 1 Average values of reproduction indexes for Romanian Yellow Spotted population

Analysing the average parameters of production and reproduction at Romanian Spotted breed from this county the following essential aspects are distinguish:

- the age of first fecund matings,  $870 \pm 4.01$  days, over 28 months, marks actually a higher age than the desired one for this breed with 60%, something which in turn is

reflected in the age of first calving at values of 37 months, with direct implications on subsequent costs of production achieved;

- the range between calving (CI) is 425 days and the dry period (RM) is 86 days;
- milk yield on normal lactation is  $3268 \pm 8.50$  kg milk;
- milk yield on total lactation is  $3675 \pm 11.45$  kg milk;
- birth rate stands at values of 85.78%;
- period of development is 4 lactations;
- milk yield on economic lifetime is 14700 kg milk;
- productive life is 8 years.

### CONCLUSIONS

The milk production variability at Romanian Spotted breed from Bistrița-Năsăud herds was very pronounced, with a range between 584 kg and 10,400 kg milk, and reflects the beneficial influence of using some males breeders of high genetic value and the possibility of increasing the productive potential of Spotted Romanian population from Transylvania through an efficient selection and a judicious matching mating.

From the analysis of the main reproduction index at Romanian Spotted cattle from family holdings in Bistrița-Năsăud showed that the reproduction function was not held at the proper

parameters, being influenced a lot by the operating technological factors.

The main cause is represented by no detecting in time the females in heat and sowing in right time, which caused the loss of many heat cycles and the late installation of the following pregnancy.

The reproduction indices weren't within the normal values, although particular breeder's interest is to get a yearly calf from each cow in their household.

The variability of production and reproduction indices however was strong, which proves the lack of appropriate selection in the studied population but also the possibility of genetic improvement by retaining and multiplying of plus variants from this population.

The selection works have to be focused mainly on meat production, cattle from this breed still maintaining overall skills of mixt efficient type.

### REFERENCES

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