

STUDY OF PRODUCTIVE AND REPRODUCTIVE TRAITS IN COWS OF ROMANIAN BLACK SPOTTED BREED FROM PRIVATE FARMS IN THE NORTH-EAST DEVELOPMENT'S REGION

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Abstract

The study was conducted on a herd of 325 cows, Romanian Black Spotted breed, exploited in various private farms in the North East Development's region, and analyze the main of productive and reproductive indices. Thus, was pursued quantitative and qualitative milk production in first lactation, body development in second lactation, respectively the age at first calving (VP), dry period (RM), calving interval (CI), service period (SP) and their evolution in the successive lactations (from I to VI).

Key words: Romanian Black Spotted, cattle, indices, reproductive, productive

INTRODUCTION

The Romanian Black Spotted (BNR) breed cattle population exploited in private farms in the North East of the country is quite heterogeneous [3, 4, 6], with productive and reproductive abilities insufficiently studied. Milk production performance differs greatly by the exploiting technology applied [2, 4, 5]. Also, body development and breeding activity are influenced largely by the conditions provided in each farm [1, 2]. Based on these considerations we propose, in this paper, we do an analysis of race NBR breed in the North-East of the country, in terms of morphological and productive traits and reproduction.

MATERIAL AND METHOD

The study was conducted on a herd of 325 cows, Romanian Black Spotted breed, exploited in various private holdings in the North East of the country, and analyze the main indices of production and reproduction. Thus was pursued quantitative and qualitative milk production in first lactation, body development at second lactation,

respectively age at first calving (VP), dry period (RM), calving - interval (CI), service - periods (SP) and their evolution on the successive lactations (from I to VI). Raw data were extracted from records offices and Reproduction in Animal Breeding from the counties in the North-East, which were processed and statistically interpreted.

RESULTS AND DISCUSSIONS

In the first normal lactation (table 1), the study population achieved an average production of 4120 kg milk with 3.80% fat and 3.25% protein, with a higher variability (between 2850 kg and 5120 kg milk).

The body development was studied in the second lactation and data are presented in table 2.

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Table 1 Mean values and the variability of milk production, fat and protein (1-st normal lactation)

Specification	n	$\bar{X} \pm s_{\bar{x}}$	V%	Min.	Max.
Quantity of milk (kg)	325	4120±115,66	15,25	2850	5120
Fat content (%)	325	3,80±0,06	5,63	3,20	4,30
Quantity of fat (kg)	325	156,50±6,57	15,54	112,80	221,30
Content in protein (%)	325	3,25±0,04	4,90	3,00	3,53
Quantity of protein (kg)	325	133,90±5,55	15,67	86,50	164,30

Table 2 Mean values and the variability of body development at the second lactation

Specification	n	$\bar{X} \pm s_{\bar{x}}$	V%
Body wait	325	590,32±8,25	6,33
Withers height	325	133,26±2,01	2,71
Height at croup	325	135,42±1,90	2,95
Thorax perimeter	325	210,15±1,87	4,67
Whistle perimeter	325	24,89±0,61	10,89
Croup width at ischial	325	36,33±0,69	8,06
Croup width at hips	325	55,72±0,80	5,72
Croup length	325	59,38±0,52	4,36
Height at the tail	325	137,80±0,94	3,78
Depth of chest	325	74,15±0,72	5,66
Oblique length of the trunk	325	148,35±0,77	3,50

Analyzing the body weight and the main body size observed that in the herd studied the values was satisfactory, with an average size of 133.26 cm for waist, 210.15 cm perimeter of chest, oblique length of the trunk of 148.35 cm and a weight of 590.32 kg.

Mean values and the estimates' variability for age at first calving, as an indicator of precocity of a population are presented in table 3.

Table 3 Mean values and the variability of first calving (days)

Estimate	$\bar{x} \pm s_x$	V%	Min.	Max.
n = 325	985,0 ± 4,6	17,2	510	1895

Average age at first calving was 985 days (over 32 months) on the entire population studied, a value that falls within the limits of literature for BNR race, analyzed on the national level. This character has a medium homogeneity, allowing improvement by imbreeding and the application of appropriate technologies of exploitation and reproduction. Dry period is a very important indicator for product quality design and estimated production levels for the next lactation (table 4).

Table 4 Mean values and the variability of dry period (days) on the successive lactations

Previous lactation:	n.	$\bar{x} \pm s_x$	V%	Min.	Max.
a II-a	325	80,2 ± 1,6	49,5	5	467
a III-a	296	75,1 ± 1,4	52,7	7	472
a IV-a	264	85,0 ± 2,2	50,8	3	390
a V-a	232	83,4 ± 2,6	52,3	2	335
a VI-a	210	79,7 ± 3,1	44,6	6	280

In the succession of six lactations analyzed the dry period ranged between 75.1 days in lactation III, and 85.0 days in lactation VI. The values of variation's coefficient is very high, reaching 52.7%, indicating poor homogeneity of this

character. Analyzing the calving interval (CI), it highlights range from 400.8 days in lactation VI, and 437.4 days in lactation II (table 5), with an average variability.

Mean values and variability of service period (SP) are presented in table 6.

Table 5 Mean values and the variability of calving interval (days)

Lactatia	n.	$\bar{x} \pm s_x$	V%	Min.	Max.
I-II	325	437,4 ± 2,9	21,9	270	1124
II-III	296	420,2 ± 4,0	22,0	285	992
III-IV	264	410,3 ± 3,8	20,5	325	780
IV-V	232	418,5 ± 5,6	19,7	292	768
V-VI	210	400,8 ± 6,5	16,4	280	586

Table 6 Mean values and the variability of service period (days)

Lactation	n.	$\bar{x} \pm s_x$	V%	Min.	Max.
I-II	325	148,6 ± 2,6	62,6	21	838
II-III	296	136,5 ± 3,2	64,5	23	629
III-IV	264	129,7 ± 4,1	63,1	24	459
IV-V	232	139,0 ± 5,6	61,2	27	623
V-VI	210	120,8 ± 6,2	49,1	34	296

The lowest value was recorded in the sixth lactation (120.8 days) and the highest value was in first lactation (148.6 days). It is noted however low homogeneity of the data, the values of the coefficient of variation exceeds in 60.0% of cases.

CONCLUSIONS

1. The BNR cows breed exploited in the households from the North-East part of the country have achieved an average production of 4120 kg milk with 3.8% fat and 3.25% protein.

2. Body weight and value of the principal dimensions are satisfactory, falling within the limits of literature for this race

3. The values of the Mean of reproduction indices - age at first calving (VP), dry period (RM), calving interval (CI), service period (SP) - shows a poor state of reproductive activity, with large differences from one farm to another and even within the same holding

4. Homogeneity characters followed in this study leaves much to be desired, standing by a large individual variability

5. The parameters studied are strongly influenced by the growth of young technology, ie reproduction and exploitation

technologies, making that genetic improvement effect is greatly diminished.

6. Improving these indicators with influence on efficiency and production levels, will be achieved by improving operational the exploitation technologies and the management of reproduction in the farms analyzed.

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