STUDY OF PRODUCTIVE AND REPRODUCTIVE FEATURES OF THE ROMANIAN BLACK SPOTTED CATTLE IN THE PRIVATE FARMS FROM IAȘI COUNTY

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Abstract

The study was carried out on 150 cattle of Romanian Black Spotted breed, raised in the private farms in Iași county, and the main indices of production and breeding were analyzed. 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 the private farms from Iași county is quite heterogeneous, with productive and reproductive abilities insufficiently studied. Milk production performance differs greatly by the exploiting technology applied. Also, body development and breeding activity are influenced largely by the conditions provided in each farm. Based on these considerations we propose, in this paper, we do an analysis of race BNR breed in the Iași county in terms of morphological and productive traits and reproduction.

MATHERIALS AND METHOD

The study was conducted on a 150 cattle from Romanian Black Spotted breed, exploited in difference private farms from Iași county, 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 - periodi (SP) and their evolution on the successive lactations (from I to VI). Raw data were extracted from official data of National Agency for Animal Husbandry (Iași county's Office), which were processed and statistically interpreted.

REULTS AND DISCUSSION

In the first normal lactation (table 1), the study population achieved an average production of 3900 kg milk with 3.65% fat and 3.15% protein, with a higher variability (between 2480 kg and 4990 kg milk).

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

Analyzing the body weight and the main body size observed that in the herd studied the values was satisfactory, with an average size of 132.16 cm for waist, 209.15 cm perimeter of chest, oblique length of the trunk of 148.35 cm and a weight of 580.42 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.

Average age at first calving was 978 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 homogenity, 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).

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

Specification	n	$\overline{X} \pm s_{\overline{X}}$	V%	Min.	Max.
Quantity of milk (kg)	150	3900±105,26	15,25	2480	4990
Fat content (%)	150	3.65±0,06	5,23	3.10	4.26
Quantity of fat (kg)	150	142.35±6,57	15,24	76,88	212,57
Content in protein (%)	150	3,15±0,05	4.80	2.85	3.35
Quantity of protein (kg)	150	122.85±5,55	15.67	70.68	167.16

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

Specification	n	$\overline{X} \pm s_{\overline{X}}$	V%
Body wait	150	580.42±8.25	6,33
Withers height	150	132.16±2.01	2.71
Height at croup	150	134.32±1.90	2.95
Thorax perimeter	150	209.15±1.87	4.67
Whistle perimeter	150	24.78±0.61	10.89
Croup width at ischial	150	36.21±0.69	8.06
Croup width at hips	150	55.63±0.80	5.72
Croup length	150	59.29±0.52	4.36
Height at the tail	150	137.72±0.94	3.78
Depth of chest	150	74.15±0.72	5.66
Oblique length of the trunk	150	148.35±0.77	3.50

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

Estimate	$\overline{X} \pm s_{\overline{X}}$	V%	Min.	Max.
n = 150	978.0 ± 4.6	17.43	510	1800

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

Previous lactation:	n.	$\overline{X} \pm s_{\overline{X}}$	V%	Min.	Max.
a II-a	150	81.2 ± 1.6	48.5	25	457
a III-a	141	76.2 ± 1.4	52.1	27	462
a IV-a	100	84.0 ± 2.2	50.6	33	380
a V-a	91	82.4 ± 2.6	51.3	32	325
a VI-a	80	88.6 ± 3.1	43.6	26	290

In the succession of six lactations analyzed the dry period ranged between 76.2 days in lactation III, and 88.6 days in lactation VI. The maximum values of variation's coefficient is very high, reaching 52.1%, indicating poor homogeneity of this character. Analyzing the calving interval (CI), it highlights range from 400.0 days in lactation VI, and 438.2 days in lactation II (table 5), with an average variability.

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

Lactaţia	n.	$\overline{X} \pm s_{\overline{X}}$	V%	Min.	Max.
I-II	150	438.2 ± 2.9	21.8	275	1115
II-III	141	420.2 ± 4.0	22.1	283	990
III-IV	100	410.3 ± 3.8	20.6	326	785
IV-V	91	418.5 ± 5.6	19.9	297	766
V-VI	80	400.0 ± 6.5	16.8	282	585

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

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

Lactation	n.	$\overline{X} \pm s_{\overline{X}}$	V%	Min.	Max.
I-II	150	149.3 ± 2.6	62.6	21	838
II-III	141	136.5 ± 3.2	64.5	23	629
III-IV	100	129.7 ± 4.1	63.1	24	459
IV-V	91	139.0 ± 5.6	61.2	27	623
V-VI	80	121.2 ± 6.2	49.1	34	296

The lowest value was recorded in the sixth lactation (121.2 days) and the highest value was in first lactation (149.3 days). It is noted however low homogeneity of the data, the values of the coefficient of variation exceeds the value of 60% in most cases.

CONCLUSIONS

1. The BNR cows breed exploited in the private farms from Iași county have achieved an average production of 3900 kg milk with 3.65% fat and 3.15% 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 expoitation technologies and the management of reproduction in the farms analyzed.

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