

RESULTS CONCERNING THE INDEXES OF MILK PRODUCTION OF RBP COW POPULATION TAKEN INTO OFFICIAL CONTROL IN 2012-2013

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Abstract

Romanian Black Pied (RBP) cow population, from the farms belonging to AGCTR taken in the official control of production in 2012-2013, totalised an effective of 4444 heads from 17 Counties of the country. This effective was taken in the official control based on which where the following parameters were estimated:

- Age structure and number of realised lactations;
- Period of total and normal lactations;
- Milk production, fat and protein content on total and normal lactation;
- Number of artificial insemination for achieving one pregnancy.

Obtained results enlighten the following:

The studied RBP population has an age structure in which predominant are young animals, with an average of 2.51 lactations with limits between 1 and 14.

Period of total lactation was 347.27 days, and normal lactation was 284.39 days, which influence the milk production performances.

Average milk production on normal lactation was 6966.24 kg milk, with limits between 1160.14 kg and 17896.1 kg milk. We notice the average milk production of over 8000 kg on the total effective RBP from Dolj, Ialomița and Teleorman counties and of some farms with performances similar to the best farm worldwide.

Existence of some plusvariance with performances of over 10000 kg milk on normal lactation underline the superior genetic value of RBP cow population and the possibility of genetic improvement using the existing variability of the population.

Key words: RBP cows, productive performances, genetic value

INTRODUCTION

Research regarding the milk production indices and fitness features in the Romanian Black Pied cattle populations with genetic and economic implications in the dairy cattle breeding, still constitutes a deficient chapter in the literature both for the farms from our country and from other countries [1], [2], [3],[4], [7]. Hence the necessity of extensive studies on the productive performances and fitness features and their inclusion in the programs of selection and genetic improvement of cattle populations [5], [6], [7].

After the literature study have emerged conclusions that can be generalized to all

cattle populations in our country, after research on exploited populations in different areas and environmental conditions.

MATERIAL AND METHOD

Was taken in study the RBP cow' population from the farms belonging to AGCTR taken in the official control of production in 2012-2013, which totalised an effective of 4444 heads from 17 counties of the country.

This population was taken in the official control of production according to standard methodology based on which, the following parameters were estimated:

- age structure and number of realised lactations;
- period of total and normal lactations;
- milk production, fat and protein content on

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total and normal lactation;

- number of artificial insemination for achieving one pregnancy;
- hierarchy of farms according to their size and productive performance;
- list with the best RBP farms taken in the official control in 2012-2013.

All the primary data collected from farms were statistically processed after the classical methodology, statistical estimators' values being summarized in tables by farms and lactations.

RESULTS AND DISCUSSIONS

In tables 1 and 2 are presented the obtained results, statistically processed which highlights the following:

The RBP analyzed population has an age structure with mostly young animals, with an average of 2.51 lactations, and limits between 1 and 14 lactations.

Table 1 Average values and variability estimates for milk production at RBP cow population from A.G.C.T.R., real productions 2012-2013 (cows with over 200 lactation days)

Feature	n	\bar{X}	$\pm s_{\bar{x}}$	s	V%	Min	Max
Period of total lactation, days	4444	347.27	1.329	88.601	26.27	200	562
Milk, kg T	4444	8010.19	45.127	1708.292	37.556	1282.58	20793.08
Fat, % T	4444	3.43	0.017	1.147	33.401	2.30	6.80
Fat, kg T	4444	268.83	1.89	125.963	46.856	37.5	902.21
Proteins, % T	4444	2.84	0.014	0.913	32.132	1,8	5.71
Proteins, kg T	4444	224.07	1.646	109.749	48.979	22.13	847.54
Fat+Proteins T, kg	4444	493	3.51	233.99	47.462	57.8	1749.54
Period of normal lactation, days	4444	284.39	0.469	31.255	10.99	200	305
Milk, kg N	4444	6966.24	32.647	1673.344	31.241	1160.74	17896.1
Fat, % N	4444	3.46	0.017	1.16	33.56	2.30	6.80
Fat, kg N	4444	236.87	1.614	107.627	45.438	37.5	879.21
Proteins, % N	4444	2.85	0.012	0.807	28.333	1,8	5.71
Proteins, kg N	4444	197.09	1.35	89.987	45.659	22.13	782.72
Fat+Proteins N, kg	4444	433.73	2.907	193.774	44.676	57.8	1671.83
Age at first calving, month, days	2735	29.57	0.136	7.109	24.038	20	57
Service - period	2011	75.65	0.62	17.809	36.76	18	178
Mammary repose	1978	65.41	1.103	29.062	53.873	15	96
Calving Interval	4430	376.59	1.244	32.809	24.595	265	583
Nr. of artificial insemination per gestation	4444	1.83	0.005	0.326	30.813	1	12
Gestation period, days	4442	282.76	0.276	12.416	4.585	265	309

Table 2 Average values and variability estimates for milk production at RBP population from AGCTR – 2013. Maturity Equivalent Productions

Feature	n	\bar{X}	$\pm s_{\bar{x}}$	s	V%	Min	Max
Lactation rank	4431	2.48	0.026	1.715	69.132	1	10
Period of total lactation, days	4431	336.86	1.311	67.258	25.903	200	539
Milk, EM, kg	4431	7054.44	33.189	1209.265	31.317	1473.76	19956.35
Fat EM, kg	4431	237.81	1.49	79.194	41.712	46.75	873.48
Proteins EM, kg	4431	201.1	1.277	64.977	42.257	22.97	761.1

Variability of this indicator is very high as observed from the standard deviation value ($s=1.781$) and the coefficient of variation ($v\%=71.01$), in herds being maintained long-lived individuals with a high milk production.

Total lactation had an average length of 347.27 days, with limits between 250-562 and a coefficient of variation $v=26.27\%$.

There is a tendency to extend lactation especially at cows with higher productions, with a negative influence on the breeding activity, maintenance costs and performances in future lactations

Average milk production per total lactation total was 8010.19 kg, with limits between 1282 kg and 20793 kg, being in close correlation with the lactation length and average daily production.

Average milk production per normal lactation total was 6966.24 kg milk with limits between 1160.74 and 17896.1kg milk, which shows a high genetic potential of the studied population.

Existence of some plusvariance with performances of over 10000 kg milk on normal lactation underline the superior genetic value of RBP cow population and the possibility of genetic improvement using the existing variability of the population.

We notice the average milk production of over 8000 kg on the total effective BNR from Dolj, Ialomița and Teleorman counties and of some farms with performances similar to the best farm worldwide.

In terms of quality, milk presented an average content of 3.46% fat and 2.85% protein, mean values in correlation with the quantitative milk production, but below the level of the followed parameters, in the selection for these traits.

The high variability present in the population offers the possibility of improving milk quality, given the high genetic determinism of these feature.

From the analysis of reproduction indices resulted that the reproduction function was

well managed average values falling within the normal limits. Average number of inseminations for one gestation was 1.83, and the period of gestation was 282.76 days.

Age at first calving was 29.57 months, the studied population having an average productive precocity.

Parturitions had a good rhythmicity with the interval between calving of 376.59 days, which means obtaining annually a calf from each cow.

Inseminated cows remained pregnant after 75.65 days average length of service-period, which is after approximately 3-4 heat cycles, tracking and detecting cows in heat been done with great attention from the specialists.

It result from these data that the management of the reproduction function has been well conducted in the majority of farms, which reflected into the production performance proving the genetic value of the population.

For reproduction in farms, was used semen from tested bulls with high genetic value, mostly from import however, production costs were too high, with implications for economic performance.

In table 3 are presented the best RBP farms according to the data from the official control in 2012-2013.

From the classification of counties with the best dairy farms in the first place stands Dolj County with an average of 8964.94 kg milk, second place is occupied by Ialomița County with 8359.62 kg, and the third was Teleorman County with 8145.27 kg milk. Follows in ranking three counties with more than 7000 kg milk, five counties with over 6000 kg, two counties with over 5000 kg, and one county with over 4000 kg milk per normal lactation.

The best maximum performances were realized in Mureș (18896.10 kg), Vaslui (16445.43 kg) and Ialomița counties (16095.35 kg).

Table 3 Best BBP farms belonging to A.G.C.T.R. in 2012 – 2013 control year (normal lactations)

County	Farms	Total farm			Primiparous		
		n	Milk, kg	Maxim,kg	n	Milk, kg	Maxim,kg
BRAȘOV	S.C. Gusturi Com SRL	8	11312,70	14960,73			
	County total	50	5547,24	14960,73	19	5399,45	11703,30
CĂLĂRAȘI	Soc. Agricola Agrozootehnica	124	6719,29	8618,08			
	SC Ilya Agro SRL	176	7814,60	10095,88			
	SC Ildu SRL	29	7804,39	9114,37			
	SC Agricat Prest Serv SRL	148	9304,31	12735,41			
	County total	671	7098,89	12735,41	215	7222,29	12391,19
CONSTANȚA	SC Zoo Traiani SRL	25	12254,29	16445,43			
	Il Rotaru Radu	19	9869,00	12808,06			
	SC Pit Con Trans 2002 SRL	9	10677,53	12547,25			
	SC Agro Minca SRL	84	9670,75	13124,16			
	PFA Grigore Paul	11	11197,25	13542,81			
	SC Lacto Genimico SRL	54	5985,45	11651,52			
County total	287	7884,64	16445,43	19	8091,85	14942,66	
COVASNA	Top Star 2000 SRL	31	6584,67	9518,84			
	Hejja Gergely I.I	11	6888,46	8813,60			
	Soc. Agr. Spicom	92	6888,56	10671,73			
	Milk Prod SRL	105	8061,77	11852,43			
	County total	387	6578,30	11852,43	141	6737,62	9699,30
DOLJ	SCDA Simnic	95	8964,92	12127,81			
	County total	95	8964,92	12127,81	32	8424,44	10831,83
GIURGIU	S.C. Holland Dairy Farm SRL	292	7652,71	11095,02			
	S.C. Dutch Dairy Farm SRL	248	5983,09	11220,73			
	County total	685	6285,84	11220,73	179	7001,14	11220,73
IAȘI	S.C.D.B. Dancu	202	6603,09	8903,18			
	County total	227	6513,31	8903,18	96	6560,73	8432,08
IALOMIȚA	S.C. Teletext SRL	324	8378,56	16095,35			
	S.C. Ghenia Farm SRL	257	8886,18	11819,94			
	S.C. O Lume de Lapte SRL	166	7507,43	9907,27			
	County total	747	8359,62	16095,35	364	8230,46	16095,35
ILFOV	I.C.D.C.B.	62	5153,83	6697,98			
	County total	93	4874,49	6697,98	18	5057,22	5585,71
MUREȘ	Autodomus	51	5041,35	18896,10			
	County total	165	6066,25	18896,10	64	5845,30	10266,16
OLT	S.C. Agro Chirea SRL	129	6436,11	9431,21			
	County total	159	6211,66	9431,21	84	6424,93	9034,92
TELEORMAN	S.C. Interferm SRL	159	8733,50	13115,39			
	S.C. Interferm SRL Zimnicea	176	8178,97	12434,63			
	S.C. Agroturist SRL	113	7265,09	14126,73			
	County total	448	8145,27	14126,73	166	8150,81	13115,39
VRANCEA	S.C. Thery SRL	25	5601,75	9597,20			
	S.C. Bar Incomex SRL Gologanu	44	6108,13	10054,80			
	County total	79	5697,26	10054,80	22	5322,34	8168,70
VASLUI	S.C. Agroind Berezeni	167	5728,81	11387,50			
	S.C. Agrotica Vișoara S.A	100	5082,51	11811,80			
	S.C. Agroind, ferma Târzii	145	7570,90	15329,20			
	S.C. Agroind, ferma Bădeana	140	7069,93	9975,01			
	County total	300	7364,80	15329,20	192	4739,03	11811,80
Total A.G.C.T.R.farms		4444	6966,24	17896,10	1619	6992,88	16095,35

CONCLUSIONS

Following the analysis of results from the official control of milk production performance in 2012-2013 resulted in the following conclusions:

The average production on normal lactation was of 6966.24 kg milk, with a medium content of 3.46% fat and 2.85% proteins.

The length of total lactation was of 347.27 days and normal lactation of 284.39 days, with approximately 20 days shorter than standard lactation of 305 days.

Age at first calving was in average of 29.57 months, calving interval 376.59 days and service-period length of 75.65 days, which shows that the reproduction function was well

managed from technical point of view.

For achieving a gestation were used in average 1.83 artificial inseminations, average length of gestation being 282.76 days.

In the studied population there were three counties with an average of over 8000 kg milk and three counties with an average of 7000 kg milk, which proves the high quality of the genetic material of the studied farms which stands at the level of the best farms with genetic material from Holstein Friesian and Friesian breed.

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