

УДК 630.1.06

A. I. Rovkach¹, A. I. Kazarez², P. A. Geshtovt¹¹Belarusian State Technological University²Republican Unitary Enterprises "Belgosohota"**TROPHY CHARACTERISTIC OF THE BELARUSIAN POPULATION
RED DEER AND FACTORS IT CAUSING**

The trophy characteristic of population is one of the major parameters as it reflects the general condition of population. High trophy characteristics of individuals in population characterizes the last as healthy and viable. Also trophy characteristic of population has important economic value as reflects the importance of this population for hunting economy. Researches were conducted in more than 13 autochthonic populations of a red deer living in various forest vegetation zones of Belarus by visual or measuring estimates of trophies of a red deer. As a result of researches it was established that the major factors determining trophy advantages at a red deer in Belarus are age structure the samtsovykh of herds, and also weather conditions in an initial stage (February – March) formations of horns. The factor rendering the greatest negative effect on formation of trophies and revealed in the course of researches is the excessive trophy press now on males that leads to excessive rejuvenation of herd and as a result decrease in middle age and quality of trophies.

Key words: red deer, trophy, male, age structure, autochthonic population.

Introduction. The deer antlers are a product of excess metabolism in the body, and the higher this excess, given the genetic component, the higher trophy quality of antlers [1]. The required potential for the formation of the trophies is caused by a combination of factors such as genetic advances, the abundance and availability of forage, structure, land, mineral nutrition, age-sex structure of the elementary population and its population density, presence of predators and competitors, disease, human disturbance, etc. Bringing these factors in optimal animal condition, even without the use of specialized feed additives, can significantly increase trophy quality animals.

Main part. For the purpose of trophy characteristics of the Belarusian populations of red deer 207 trophies of red deer have been estimated in accordance with the "Procedure for users of hunting grounds accounting and valuation produced hunting trophies". It was measured 89 antlers from 3 local populations. It was purchased and installed 4 with photofixing cameras to evaluate the animals quality. It was received more than 200 photos and videos with photofixing cameras, 40 pictures with a camera, 5 video with deer. Observations were done during the rut for 130 hours.

Trophy quality is an important indicator of the status of deer populations. But it should be noted that because of the lack of a proper regulatory framework a large number of trophies were taken without evaluation and therefore the quality data on their are absent. In total, we analyzed 207 trophies of red deer from different local populations, estimated at various national exhibitions and are in private collections of Belarusian hunters. Of 207 trophies, 46 (22.2%) of them were evaluated at a gold medal, silver – 76 (36.7%), bronze – 61 (29.5%), without a medal was 24 (11.6%) (Table 1).

Most of the trophies belongs to the deer from Belovezhskaya-Pruzhany population, which is by far the most numerous in the Republic. The highest number of gold medals has Nalibokskaya population, where the press trophy hunting is much lower. Based on visual observations of deer during the rut in "Naliboki" 64.7% of deer have a high trophy quality or the makings, 29.4% were mediocre and 5.9% have bad (breeding) quality. Relatively high trophy qualities have Lipchanskaya and Negoreloe populations. Negoreloe population has the greatest share of trophies with a gold medal (45%). It should be noted that the bulk of the trophies of high quality is produced in populations of red deer, having Belovezhskaya roots and are, as a rule, in the southwestern part of the Republic.

To identify the impact of the age of males on the dignity of trophies we analyzed in detail 28 trophies, valued at a bronze medal, and 16 trophies, which are not received medals as a result of the evaluation. When analysing of all the trophies were divided into three age groups: young males (under 8 years), adult males (8–12 years), older males (over 12 years). These age groups we used the example of Western European age classifications of red deer [2].

Out of the 28 considered trophies 15 (53.6%) referred to the group of young males, 5 (17.9%) to the group of old or degraded males and only 8 (28.6%) to the group of adult males. All 16 trophies left without a medal, were classified as young. Thus, the vast majority of shot red deer stags have not reached the age of "ripeness", in which the trophies reach the maximum size. A particularly threatening situation with a young males occurs is the most large Belarusian populations of red deer – Belovezhskaya-Pruzhany.

Table 1

Advantages of trophy deer taken in different local populations of Belarus

Trophy dignity	Bialowiezskaya-Pruzhanj	Naliboki	Lipchanskaya	Negoreloe	Logoyok	Osipovichj	Grodno-Ozersk	Baranovichj	Telekhany	Krugloe	Babinovichskaya	Shatskaya	Other	Total
Gold medal	7	9	4	5	4	1	–	–	1	1	3	1	10	46
Silver medal	21	11	4	3	6	5	3	–	4	4	3	3	9	76
Bronze medal	26	4	7	2	2	2	4	1	1	1	2	3	6	61
Without medals	11	1	–	1	1	–	2	6	–	–	–	–	2	24
<i>Total</i>	65	25	15	11	13	8	9	7	6	6	8	7	27	207

For Belovezhskaya-Pruzhanj population of all seized males more than 50% refers to young males, i.e. have not reached the peak of its growth. Excessive press of trophy hunting does not allow to increase the age of males, and the shooting accounts for a group of young males. At the same time, such populations, as Naliboki and Negoreloe, the trophy with high value are 80 and 72%, respectively. The reasons of this lie in the normal male age structure of the herd where the average age is much higher than that in Bialowiezsko-Pruzhanj population.

In Nalibokskaya population, which has the highest percentage of trophies with high value, there is no intensified hunting press and as a consequence, the age structure is close to natural. The age structure of Negoreloe population is balanced by the rational exploitation. Thus, it should be concluded that a large number of males sprouts much earlier than they have time to reach the growth peak. Therefore, the main reason of quite low trophy indicators of deer in Belarus should be accepted the unbalanced animals shooting, which leads to the reducing of the average age of males produced, and therefore to the reducing of the advantages of animals trophy.

The quality of the trophies is connected with the meteorological conditions in winter. This connection is determined by the availability of food in winter. As mentioned above, the antlers are a product of excess metabolism in the animal organism, the more the excess in the body, the more it can be used on the antlers production. Thereby, the animals must get enough food during the formation of antlers. This applies especially to α -males. In this category of males, the mew is in mid-February, i.e. the formation of antlers occurs in the unfavorable period. So, as of 25 March 2013 on the whole territory of Belarus there was a snow depth of 13 cm in the south-west and 50 cm north-east. It is known that when the snow depth is 20 cm or more, the feed of a living ground cover stops that significantly limits feed intake. At the same time, in 2014, 25 February the snow cover on the territory of Belarus.

Thus, the quantity and availability of food in the spring of 2014 was higher. This had an impact

on the quality of the α -males trophies. We have analyzed the trophies of red deer old age group, produced in the seasons of 2013 and 2014.

In accordance with obtained data, the percentage of trophies at the bronze medal remained similar – 8–10%. However, the ratio of trophies, estimated at a gold medal, was different. If in 2013 the trophies at the gold medal amounted 15%, in 2014 amounted 50%.

For the purpose of comparison of red deer trophy quality from different habitats and of different origin was made analysis of the antlers various linear indices. As the analyzed populations were taken Bialowiezskaya, the Shereshevsky cage, Voronezh, Pruzhanj (Belovezhskaya origin), Naliboki (Belovezhskaya origin) and teterinskoe (mixed origin). Comparing different linear options of mewed antlers, it was found that there are no significant differences between antlers of different autochthonous populations of red deer in Belarus. This is due mainly to the fact that they have the Belovezhskaya origin. It should also be noted that there are no significant differences in the deer antlers of the Bialowiezskaya and Voronezh lines.

Autochthonous populations differ in the size of antlers from populations that are created of red deer, bred in Western Europe farms and are actively imported in Belarus. We have analyzed various trophy options of deer in four populations: Pruzhanj, Naliboki, Negoreloe and population “Krasny Bor”, created by LLC “Inter-service”. The first three are typically of the Bialowiezskaya origin, the fourth is formed mainly from animals brought from the farms of Western Europe. For comparative data we analyzed only the trophies, estimated at a gold medal, i.e. from the animals within one age group (old deer). The results are shown in Table 2. As follows from the analysis of autochthonous populations of red deer antlers barrel and the first sprouts are longer. The length of intermediate antlers process of deer from Krasny Bor is longer than this of autochthonous deers. It is obvious that the antlers linear characteristics of autochthonous deer populations exceed the antlers the English line deer. The number of sprouts on the barrel of red deer from Krasny Bor is more than of the local populations.

Table 2

A comparison of the trophies elements of different originopulations

Element antlers	The population of red deer			
	Pruzhany	Naliboki	Negoreloe	Krasny Bor
Antlers length, cm	109.2	104.0	107.0	95.6
The length of the first sprout, cm	41.08	41.4	40.4	35.0
The length of average sprout, cm	35.8	36.2	35.1	37.1
The circumference of the antler outlet, cm	26.9	27.6	28.4	28.5
The lower antler circumference, cm	15.9	16.4	17.2	16.4
The upper antler circumference, cm	15.7	16.4	16.7	15.2
The number of sprouts, PCs.	7.5	7.9	8.2	10.3

Quite often, the number of sprouts of red deer increased: a bifurcated first and secondary sprouts, additional sprouts between the first and ice, etc. For deer from Krasny Bor the maximum number of sprouts (33 on both antlers) were fixed. The mass of the deer antlers, having Belovezhskaya origin, is distributed more uniformly along the barrel as the upper and lower girths of the antlers differ slightly. At the same time, the reindeer from Krasny Bor is characterized by the decrease of the upper girths of the antlers in comparison with lower. This fact suggests that the mass of the antler is concentrated in its lower part of the antlers. General view of deer antlers from Krasny Bor is less noble, slightly shorter shape with a large number of sprouts. Autochthonous populations antlers are closer to natural forms, which are formed evolutionarily in a natural environment. The English line antlers should be considered to be received as a result of artificial selection. The experience with livestock has shown that the majority of them are rarely survive in the natural environment. Breed who is in conditions of

natural freedom and survive in it, gradually lose the features that have been artificially developed.

Thus, it can be concluded that autochthonous populations of deer have larger antlers in comparison with deer, having Western European origin. Also given the high degree of domestication of the Western Europe reindeer, preference should be given to the breeding of autochthonous populations.

Conclusion. As a result, we can say that in the world's top of deer trophy, our best trophies are located outside the first hundred. The world record – to 273.6 points – was registered in Bulgaria (1988). The main reasons for the low percentage of trophy males and their low dignity are rooted in ignorant shooting without taking into account the age and sex structures of populations, biological and ecological characteristics of habitat of red deer. In this regard, the main measures to improve trophy quality of red deer population in Belarus should be aimed at increasing the average age of males and the optimization of age and hierarchical structure of male herd.

References

1. Danilkin A. A. *Olen'i* [Deers]. Moskow, GEOS Publ., 1999, 552 p.
2. Fischer M., Shumann H-G., Lamster H. *Ansprehen des Shalen wildes*. Berlin, VEB Deuther Landwirtschaftsverlag Publ., 1983. 143 p.

Information about the authors

Rovkach Andrey Ivanovich – Ph. D. Agriculture, assistant professor, head of the Department of Hunting Science. Belarusian State Technological University (13a, Sverdlova str., 220006, Minsk, Republic of Belarus). E-mail: air1@tut.by.

Kazarez Aleksandr Ivanovich – Ph. D. Agriculture, director of Republican Unitary Enterprises “Belgosohota” (22, Pryamaya str., 220089, Minsk, Republic of Belarus). E-mail: s_kozorez@mail.ru

Geshtovt Pavel Antonovich – Ph. D. Agriculture, assistant professor, Department of Hunting Science. Belarusian State Technological University (13a, Sverdlova str., 220006, Minsk, Republic of Belarus). E-mail: heshtaut@mail.ru

Received 16.02.2015