

# RESEARCHES REGARDING QUALITY OF SHEEP SKINS OBTAINED FROM KARAKUL FROM BOTOSANI SHEEP

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Original scientific paper

**Abstract:** Studies were designed to highlight the quality of sheep skins obtained from the new formed race. The biological material examined was owned by private farms in the North-East of Romania. To emphasize the aesthetic and commercial value of sheep skin were analyzed more properties on which depends this production quality, and working methods used were those accepted in Karakul sheep selection in Romania. Researches were based on the collection, processing and interpretation of data obtained as a result of buckling quality assessment at the Karakul lambs, black variety, produced in 2009 calving season. All traits were assessed in daylight and after investigations it was found that from the total of 986 lambs were subjected to assessments about 98.27% was a black color associated with a high gloss. Also, to the estimated group, the size of loops can be seen in an advanced stage of improvement, because about 90% of sheep produce sheep skins with loops of size and appearance was in full compliance with quality requirements for all types of loops in black variety. The results reached confirms that sheep skins, overall, has some qualitative features of buckling expressed at a higher level. This fact is primarily due to rigorous selection of sires and directing mating. All these actions, conducted at a sustained level, had a direct influence on the quality of biological material retained for breeding and they had facilitated growth of aesthetic and commercial value of sheep skins on next generations.

**Key words:** sheep, Romanian breeds, Karakul of Botosani, skins, loops

## Introduction

Husbandry and exploitation of sheep for skins production is a current concern of the rural population that is located in the North-East of Romania. Increased Karakul sheep is a tradition in this area since the beginning of XIX century, when, for the first time, were imported sheep of this breed from Russia. Starting from this nucleus, which was subsequently added to other flocks from Germany, Austria and

Uzbekistan, but also from local sheep Turcana (black-and grey varieties) has come a long process of forming a well-adapted Karakul to the pedoclimatic conditions from Romania and this Karakul has a high quality of buckling (*Ionescu et al., 1994*). Approval of the new breed called Karakul of Botosani was done in 1988 and ended a long and complex process for over 50 years to form this breed.

## Materials and Methods

Studies have contributed to the knowledge of improvement level of Karakul of Botosani sheep for the main features, to guide the selection and increase technology, so as to considerably increase the aesthetic and commercial value of sheep skins obtained.

**Biological material** that was the subject of assessments comprised 986 Karakul lambs bred, black variety, produced in 2009 calving season.

### **Working methods:**

- lambs were evaluated according to official instructions included in the Technical instructions for assessment and certification of animal reproductive material in Romania;

- ratings for each attribute were noted in the certificate of origin and productive value observing specific working methodology;

- obtained results were central individual settling weight of each analyzed feature in total score;

- total score served to determine the productive performance of each individual assessed.

## Results and Discussion

**Sheep skins color and hue.** This attribute is determined by the presence of melanic pigments in fiber structure and it is very important in expressing sheep skins overall value. To obtain such data as close to the value of the properties it is necessary to assess the daylight. After investigations found that the total of 986 lambs subjected to assessments, only 17 of them (representing 1.73%) have the black color with reflex blue, meaning that we want. The data from table 1 shows that the highest share (98.27%) is usually shades of black, which is why, to correct this feature, should apply a rigorous selection and a correct pairing of the parents.

**Type and form loops.** Pilose coating at the newborn Karakul lamb is represented by the fibers grouped in formations called loops. The quality of oops depends on all fiber characteristic. More defining elements give the differences between the loops, but more particularly the shape and size.

The data from tab. 1 shows that the age of lamb, majority of sheep in the studied flock produce sheep skins with types of loops with different values, but

typical of the breed and their good uniformity in the meaning of this, in most cases, 1-2 types of loops and a lower proportion of three or more.

However the aspect that has contributed to reduce buckling for is the high proportion of types of loops in the form of grain and small tube and in the flattened forms hasn't an intense gloss. Gratifying is that type deficient loops (rings, loose, corkscrew) were found in only 16% of all lambs undergoing assessments.

Based on the data it can be concluded that the size of loops can be seen in an advanced stage of improvement, whereas about 90% of sheep produce sheep skins with loops of size, appearance was in full compliance with quality requirements for all types of loops in black variety, point noted also by other authors (*Draganescu, 1964; Ionescu, et al., 1985; Mochnacs et al., 1978; Tafta et al., 1972*).

**Fiber quality.** This is an attribute of the overall fibers, but directly which directly determines the quality and durability of buckling and depends on smoothness, length, shine and elasticity of fibers present on the surface of sheep skin. In view of these provisions must be said that tougher fibers, friable, too long or too short, given the lower loops and lack of sustainability.

**Table 1. Color, shape and size of loops**

Specification	Type	n	%
Color	Blue- Black	17	1.73
	Black	969	98.27
Shape of loops by tube	Long tube lung	2	0.20
	Medium tube	20	2.02
	Short tube	96	9.73
	Flat tube with intense gloss	40	4.05
	Flat tube with good gloss	76	7.70
	Flat tube without gloss	8	0.81
Shape of loops by grain	Large grain	37	3.75
	Medium grain	30	3.04
	Short grain	176	17.84
Flattened shape	Wave with high gloss	20	2.02
	Wave with good gloss	308	31.23
	Wave without gloss	15	1.52
TOTAL		828	83.97
Deficient kinds of loops	Ringed	62	6.28
	Corkscrew shape	6	0.61
	Loose loops	90	9.12
TOTAL		158	16.03
Loops size	Large	87	8.82
	Medium	756	76.67
	Medium – small	123	12.47
	Small	20	2.02
TOTAL		986	100

**Table 2. Quality of the fiber forming pilose coating**

Specification	Type	n	%
Quality fiber. whole	Silky	621	62.98
	Rough	334	33.87
	Smooth	28	2.84
	Woolly	3	0.30
Fiber thickness	Normal	838	84.99
	Thin	129	13.08
	Thick	19	1.92
Fiber length	Medium	830	84.17
	Long	17	1.72
	Short	139	14.09
Strength and elasticity	Good	186	18.86
	Medium	687	69.67
	Poor	113	11.46
Gloss of fibers and buckling	Intense	3	0.30
	Good	623	63.18
	Satisfying	321	32.55
	Poor mechanical	39	3.95

Assessments made when it was found, overall, good quality fibers. From this perspective we can state that the sheep flock is in a good stadium of improvement over 70% of skins were marked with maximum points.

Compared to the ratings given, the gloss of fibers and implicitly gloss of sheep skins are in full stage of improvement, whereas over 63% of the total number of sheep have been appreciated with good mark.

**Features of loops.** This category includes several features that directly depend on the quality loop as morphological unit of buckling in its entirety. When specifying this appearance there are referred directly to the degree of closer, rolling direction and size loop.

Distribution of sheep by degree of closer of the loops shows a pronounced variability, something that is not fully consistent with the types of loop recorded. Stage of improvement on this feature can be considered average, because 61.77% of the sheep skins has advanced degree of closer loops (from 1/1 to 1/2 + 1/3).

**Rolling direction** presents characteristic aspects at 65% of the flock of sheep appreciated. However, since it was found that loops have a mixed rolling direction to a considerable number of sheep (32.45%) it is necessary to take account of this feature in improvement process.

**Table 3. Features of loops and buckling**

Specification	Type	n	%
Degree of closure of loops	1/1	10	1.01
	1/2	83	8.41
	1/4	515	52.23
	3/4	378	38.33
Rolling direction	Cranial	341	34.58
	Caudal	325	32.96
	Mixed	320	32.45
Uniformity of loops	Good	151	15.31
	Medium	719	72.92
	Poor	116	11.76
Density of loops	Thick	179	18.15
	Medium thick	564	57.20
	Rare	243	24.64
Modeling of buckling	Very good	1	0.10
	Good	406	41.17
	Satisfactory	565	57.30
	Poor	14	1.41

**Density of loops** is an attribute that influences the overall characteristics of buckling, participating directly in the expression sheep skins quality. Based on determined values may be indicated that, in this view, improvement process is in better coordinated, whereas over 75% of studied sheep skins had the density of loops was the desired.

**Modeling of buckling.** Externalization of this feature depends on how the loops are arranged among themselves, and how they are spread over the skin. A good modeling of buckling highlights, with all clarity, a drawing, which depend largely aesthetic and commercial value of sheep skins. The data obtained allow us to say that the point of view of this feature, the improvement process was conducted properly and that it is on track.

**Skin quality.** Skin quality is a defining element in improvement process and in quality sheep skins assessment. The skin quality to the Karakul lambs assessment is analyzed in terms of thickness, total area and the useful area. Aesthetic and commercial value of sheep skins decreases if the useful area is reduced, however the buckling should be valuable. Based on results assessment of sheep skins quality from sheep black variety was found that, overall, recorded values were characteristic Karakul breed (Table 4).

**Table 4. Skin quality, body conformation and constitution**

Specification	Type	n	%
Skin thickness	Normal	874	88.64
	Very thin	321	32.55
	Thick	39	3.95
Skin area	Large	611	61.97
	Medium	344	34.88
	Small	31	3.14
Body conformation	Typical head	914	92.69
	Half typical head	72	7.30
	Typical top line	912	92.49
	Half typical top line	74	7.50
	Typical tail	912	92.49
	Half typical tail	74	7.50
Constitution	Robust	910	92.29
	Fine	76	7.70

**Figure 1. Lamb Karakul of Botosani with correct conformation**

Body conformation and constitution. Regarding the assessment based upon the three body regions, body conformation, it appears that the proportion of individuals with half typical and atypical cases is very low. Constitution was the desired that is robust to 92.29% of the total number of individuals, which is why they largely meet the requirements of framing in elite and record class.

## Conclusion

1. After hue, on assessment, most lambs (98.27%) presented a black and only in very few cases it was black with blue reflections.

2. The forms of valuable loops, tubes, grain and flattened loops, were present at approx. 83.97% of appreciate individuals and defective forms to 16.03%.

3. The size of buckling was in most cases of medium type (76, 67%) and to a lesser extent it was large and medium - small type.

4. In terms of quality fibers and their thickness, as people appreciate, it is within the limits of the type sought, and also resistance and fiber and buckling gloss were externalized to a higher level.

5. The degree of closure of loops, played by the circumference described by rolling fibers, was 1/4 at approximately 52.23% of lambs subjected to phenotypic assessments.

6. Regarding the rolling direction, it was caudal, cranial and mixed approximately in equal proportion.

7. For the future must be working actively on buckling uniformity because it was found that feature had intermediate values at about 72.92%.

8. As was noted that the approximately 98.37% of people appreciate, the modeling of buckling was satisfactory and good, in sheep breeding selection will take account of this feature.

9. From the data follows an overview of the improvement stadium for the main features of sheep skins to the Karakul lambs bred and highlights the possibility of some upward correction of these genetic methods based on judicious matching couples' genitors.

## **Ispitivanje kvaliteta ovčije kože dobijene od ovaca rase krakul botosani**

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### **Rezime**

Istraživanja su namenjena da se istakne kvalitet ovčijih koža dobijenih od novoformirane rase ovaca. Ispitivani biološki materijal je vlasništvo privatnih farmi u severo-istočnom delu Rumunije. Da bi se naglasile estetska i komercijalna vrednost ovčije kože analizirano je više osobina od kojih zavisi kvalitet ove proizvodnje, i korišćene metode su prihvaćene u selekciji Karakul ovaca u Rumuniji. Istraživanja su zasnovana na prikupljanju, obradi i interpretaciji dobijenih podataka kao rezultat za procenu kvaliteta kod Karakul jagnjadi, crnog varijeteta, rođenih 2009 u sezoni jagnjenja. Sve osobine su ispitivane na dnevnoj svetlosti, a nakon ispitivanja je utvrđeno da je od ukupno 986 pregledanih jagnjadi oko 98.27% je bilo crne boje sa visokim sjajem. Takođe, u

ocenjivanoj grupi, petlje se mogu videti u podmakloj fazi razvijanja, jer oko 90% proizvodnje ovčije kože izgleda je u potpunoj saglasnosti sa zahtevima za kvalitet za sve vrste petlji kod crnog varijeteta. Dobijeni rezultati potvrđuju da ovčija koža ima neke kvalitativne osobine izvijanja u viši nivo. Ova činjenica je primarna zbog rigoroznog izbora očeva i kontrolisanog parenja. Sve ove radnje, sprovedene na održivom nivou, imale su direktan uticaj na kvalitet biološkog materijala odabranog za uzgoj i omogućile su povećanje estetske i komercijalne vrednosti ovčije kože u narednim generacijama.

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Received 30 June 2011; accepted for publication 15 August 2011