

**TOPOGRAPHIC CHARACTERISATION OF THE FLEECE
FINENESS IN STAROPLANINSKI
- TSIGAI SHEEP**

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ABSTRACT

The aim of the study was to prepare a topographic description of the fleece fineness of Staroplaninski Tsigai sheep. Five trial groups of 60 animals each were formed on reproductive farms in several regions of northern Bulgaria where the breed was created. The control group included pedigree Tsigai, Priazovski type. The staple thickness was measured at four sites: the flank, the thigh, shoulder, back, neck and abdomen of sheep 2.5 and 4.5 years of age. From 40 animals, randomly chosen from all the groups, 200 fibres were measured for diameter per animal. In all the groups, the thickest fibres were measured on the thigh, and the finest ones on the neck. The mean values among the groups varied within 29 to 34 μm and could be graded 48-50 according to the Bradford system, and that is the optimal staple quality for the Tsigai breed.

Keywords: *Staroplaninski Tsigai sheep breed, fleece, fibre, neck, shoulder.*

INTRODUCTION

A basic issue in improving the Tsigai breed is elevating the quality parameters of the wool and especially its standardization and achieving a better topographic uniformity.

The topographic uniformity of the fleece has been first studied on fine-fleece sheep in the south-west of Bulgaria. The staple was analyzed on seven sample sites on the animal. Satisfactory uniformity was found and the difference between the flank and the thigh was 2.3 μm .

Lazarov and Antonova (1976) and Lazarov *et al.* (1983) examined five sites of fine-fleece sheep breed in the Danubian Plane, namely the shoulder, flank, back, neck and abdomen. They concluded that on the sites producing the highest amount of wool (the shoulder, flank and back) the staple diameter was close in value, with differences from 0.34 up to 0.60 μm .

Hinkovski *et al.* (1980) reported difference of 0.8 μm in the staple fineness between the shoulder and the thigh in the north Bulgarian Fine-fleece breed, and Stoyanov (1980) obtained 1.16 μm difference in the Shumen type.

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Raichev and Noriera (1980) arrived to the conclusion that the Corriedale and Dorset Horn breeds featured a very good topographic uniformity of the fleece fineness.

Tyankov *et al.* (1989) examined certain quality parameters of the wool of sheep Tsigai type, reared on six farms in southern Bulgaria. The wool fineness on the flank of the ewe-lambs studied, varied within 26.16 to 32.40 μm , that is from grade 48 to 56 (Bradford system); on the thigh the results were 33.82-29.28 μm , grade 48 to 50. The fibre diameter in the fleece sites of Staroplaninski Tsigai was examined.

The object of this study was to examine the fibre thickness at six sites of the fleece of sheep, Staroplaninski Tsigai breed, at two ages and also to make up a topographic description of their fleece.

MATERIALS AND METHODS

The study was performed at the Experimental Base of RIMSA, Troyan. The flock comprised first class Staroplaninski Tsigai female lambs, balanced in age (5-6 months) and allocated in groups of 60 animals. Five of the groups were obtained from farms where the breed was 1st established, and the control included thoroughbred Tsigai, Priazovski type. In sheep aged 2.5 and 4.5 years, the fleece fineness was examined. Wool samples for analysis were taken from 40 randomly chosen animals. Two hundred fibres were measured at six sites such as the, flank, thigh, shoulder, back, neck and abdomen. The results were processed using statistical variation techniques.

RESULTS AND DISCUSSION

The fibre grade estimated, satisfied the requirements for the Tsigai breed. In 2.5-year-old animals the thickness of fibres varied from 26.57 μm , on the shoulder, (in the Vranilovtsi group), to 34.72 μm , on the thigh (the control group) (T1). The mean values of all the sample sites on the fleece of the control group were higher than those of the trial groups and varied within 31.60 μm (abdomen) to 34.72 μm (thigh). Among the trial group animals, the sheep with the coarsest staple came from the village of Malinovo, followed by those from Borovtsi and G. Zhelyazna; the sheep from Mramoren had the finest staple.

The sample site with the thickest staple was the thigh, and the finest diameter was measured on the neck, in both the control and the trial groups. The highest value difference in the control group was found on the thigh, 6.12 μm , and the lowest, 4.66 μm , on the abdomen.

In the 4.5-year-old animals (T), the grade variations (among the groups and the sample sites) were not unidirectional. There was a trend of increasing staple diameter of the animals from G. Zhelyazna and Borovtsi. However, the differences were not significant and fell within the limits of one quality grade, as is normal for the Tsigai breed. At this age, the same trend remained for the thigh to be the site with the coarsest wool, 35.31 μm (control group) and 31.79 μm (trial animals), and the shoulder with the thinnest, 29.46 μm and 31.53 μm , respectively.

The values for fibre diameter of the sites flank and shoulder at both ages were near to the gained by Tyankov *et al.* (1989) for Tsigai type.

The animals in the control group had the thickest staple diameter at all the trial sites. At this age the variation coefficients were lower and that points to better uniformity of wool thickness. In the control and the trial groups, the results for wool fibre thickness at the basic fleece sample sites; shoulder, flank and back (taken together) varied within very narrow limits. This is so because the selection of this breed aims to get well qualitative wool.

The uniform wool thickness is of essential importance in the manufacturing of high quality woolen material. The values for the variation coefficients point to the uniformity level. For the wool studied in our experiment, these values were very low, down to 23.72 %, while the permissible is 28 % for the Tsigai wool.

CONCLUSIONS

The Staroplaninski Tsigai sheep are characterised by a very good topographic uniformity of the fleece for fibre thickness.

The fleece fineness at the sample sites varied within narrow limits at 2.4 and 4.5 years of age. The thigh had the coarsest wool, and the finest fibres were found on the neck and the shoulder. The variation obtained was within 29.1-34.0 μm , and that is the most desired wool for the production of a well qualitative textile wool clothes.

The introduced Tsigai (the control group) had the thickest fibres at both ages.

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