

Interreg - IPA CBC



Greece - Republic of North Macedonia

PAPESHE

Deliverable 3.1.1 Population statistics and phenotypical description of the existing Florina Pelagonia sheep flocks in the cross-border area

Project acronym: **PAPESHE**

Project full name: **Protection of Autochthonous populations of PELagonia SHEep breed in the cross-border area**

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Key information

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Introduction

It is broadly acknowledged that the first step of the characterization of local genetic resources is based on the knowledge of variation in the morphological traits (Delgado et al., 2001). Body measurements and live weights (LW) of live animals have been used extensively both in experimental works and in genotype selection regimes for various reasons. Particularly for genotype selections, measurements of body and LW allow for faster progress in a chosen set of desired traits. The most common measurement of animal performance is the live weight gain (LWG) and LW of adult animals as both of which provide a reliable and informative basis/criteria for selection, feeding requirements, health management (Thiruvenkanden, 2005), and decision on selling price.

With regards, to the existing population of the Florina- Pelagonia sheep in Greece, our objective was to describe the morphological characteristics as well as the variations of the morphometrical traits of this breed in the cross-border area. Thus, within a period of four months (i.e. May 2019 to August 2019), a working team consisted of two animal scientists (PhD), one skilled technician of University of Western Macedonia and one undergraduate student of the University visited one experimental and three commercial farms to obtain body measurements and to collect other morphological traits in a number of Florina-Pelagonia sheep. Two visiting farms were located in the greater area of Florina, one farm in the area of Pella and the fourth in the area of Thessaloniki (Figure 1).

Body measurements were taken on adult female sheep only. All measured individuals were registered as recognized autochthonous Florina-Pelagonia sheep (Greek ministry of Agriculture) and were above 9 months of age to ensure that all measured animals had fully developed body

and completed growth with a good body condition (i.e. averaged from 2 to 5 on a five-point scale, across farms).

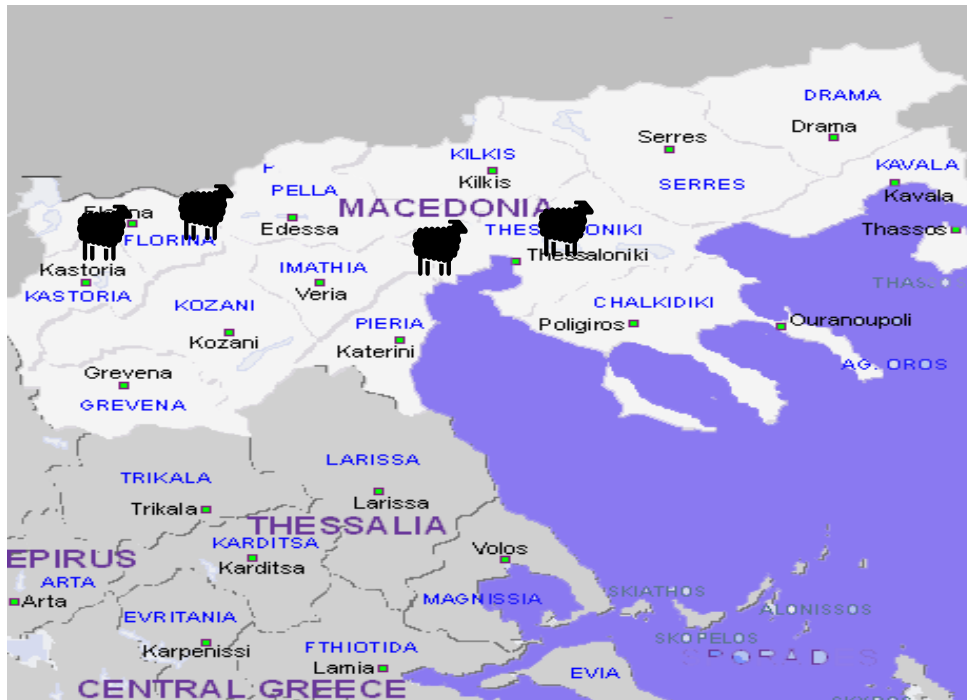


Figure 1 Florina Palagonia sheep farms

The total number of the sheep recognized from the Greek ministry of Agriculture is around one thousand (1000) and the average number of the animals that participated in the body measurements is around 17%. (Figure 2).

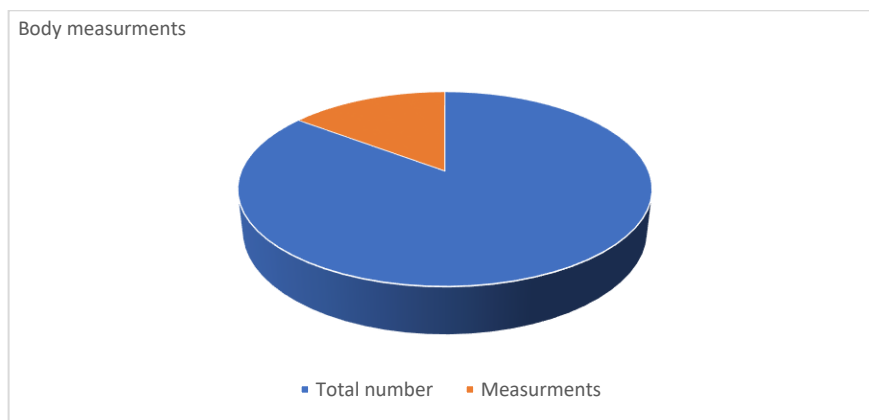


Figure 2. Percentual of animal participated on body measurements.

Methodological approach

For every animal, body measurements were carried out using a Lydthin stick, a tape measure and a Vernier calliper (Picture 1). The animals were on an upright plane during the measurements. The exact position of each reference point of measurement was identified on animals by palpation on the relevant anatomical bone. The body measurements included: height of the withers, height at the middle of the back, chest girth, body length, chest depth, chest width, rump length, rump width (RW), cannon bone circumference and chest width (Figure 3).

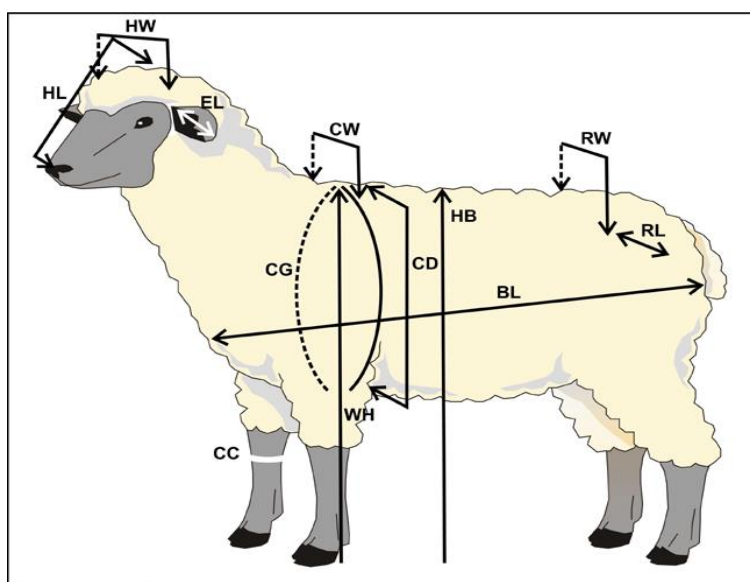


Figure 3. Zoometrical variables studied (height, length and perimeter) and their reference points.

Wither Height (WH): as the highest point measured as the vertical distance from the top of the shoulder to the ground (bottom of forelegs);

Height at the middle of the back (HB): as the height at the middle of the back from the ground;

Chest Girth (CG): as the circumference of the chest posterior to the forelegs at right angles to the body axis;

Body length (BL): as the horizontal length from the point of shoulder to the pin bone;

Head length (HL): as the distance between the upper limit of the forehead to the tip of the nose;

Head width (HW): as the maximum distance between zygomatic arches;

Ear length (EL) : as the distance from the base to the tip of the right ear, along the dorsal surface (length of the external ear from its root to the tip);

Canon circumference (CC): as the perimeter of the right foreleg, between the knee and the pastern;

Chest Depth (CD): as the vertical distance from the top of the withers to the sternum;

Chest Width (CW): as the maximum intercostal diameter at the level of the 6th rib, just behind the elbows;

Rump Length (RL): as the distance from hip to pin;

Rump Width (RW): as the maximum distance between left and right hurls.



Picture 1. Obtaining Wither Height (a) and Head Width (b)

Results

A total of 171 female sheep of the autochthonous Florina-Pelagonia sheep were measured. The results of the body measurements are shown in Table 1 (The analytical results can be found in Appendix A). Two of the most important measurements i.e. withers height and body length averaged 68,2 cm and 75,1 cm, respectively, supporting earlier notion that the breed is characterized as a medium sized.

This is also supported by the measurements obtain in the chest area; chest width and chest depth measurements averaged 23.5 cm and 30.6 cm, respectively, while chest girth averaged 93.0 cm. Rump length averaged 22.4 cm, rump width 19.9, ear length 13.8 cm, head length 24.4 cm, head width 9.1 cm and cannon circumference 9.11 cm. The head can be characterized as big with drooping ears; ewes are normally polled, while the rams have spiral horns.

Table 1. Results of the body measurements

Traits	MEAN (cm)	STDEV (cm)	SEM (cm)
Wither Height (WH)	68.2	3.9	0.3
Height at the middle of the back (HB)	65.9	6.0	0.5
Body length (BL)	75.1	6.4	0.5
Chest Width (CW)	23.5	2.4	0.2
Chest Depth (CD)	30.6	3.2	0.2
Chest Girth (CG)	93.0	6.1	0.5
Rump Length (RL)	22.4	2.3	0.2
Rump Width (RW):	19.9	2.2	0.2
Ear length (EL)	13.8	1.3	0.1
Head length (HL)	24.4	1.9	0.1
Head width (HW)	9.1	1.3	0.1
Cannon circumference (CC)	9.1	0.9	0.1

Conclusions

The results support the notion that body is regarded as long with a straight dorsal line while legs are strong which indicates that it is a robust breed that can withstand long walking distances.

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More information about the project

Papeshe.vet.auth.gr

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