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## Some Morphological Characteristics of Kars Dogs

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**Abstract:** This study was carried out to determine body weight and some body measurements of Kars dogs. Thirty-three adult (2+ years old) male and 27 female Kars dogs, raised by different breeders in several villages of the Kars region, were used. Body weight and all body measurements except for distance between the ears were higher in males than in females ( $P < 0.05$ ,  $P < 0.01$ ).

**Key Words:** Kars dogs, body weight, body measurements

### Kars Köpeklerinin Bazı Morfolojik Özellikleri

**Özet:** Bu çalışma, Kars köpeklerin canlı ağırlık ile bazı vücut ölçülerinin belirlenmesi amacıyla yapılmıştır. Çalışmada, Kars yöresinin değişik köylerinde farklı yetiştiriciler tarafından büyütülmüş olan 33 erkek ve 27 dişi ergin Kars köpeği kullanılmıştır. İki kulak arası uzunluk hariç incelenen tüm vücut ölçüleri ile canlı ağırlık değerleri erkeklerde dişilerden daha yüksek düzeyde belirlenmiştir ( $P < 0.05$ ,  $P < 0.01$ ).

**Anahtar Sözcükler:** Kars köpeği, canlı ağırlık, vücut ölçüleri

### Introduction

Kars dogs are bred in the northeast part of Turkey, especially in the Kars region. This region of Turkey neighbors other Caucasian countries. Kars dogs are characteristically similar to the Caucasian Ovcharka, which is bred in Georgia, Armenia, Azerbaijan and Iran (1-4). The Caucasian Ovcharka, which is also known as the Caucasian mountain dog, is a guard dog from the Caucasus mountains area. The Caucasian Ovcharka has been recognized and classified by the Federation Cynologique Internationale (3) and the United Kennel Club (4).

Kangal, Akbash and Kars dogs are specific Turkish livestock-guarding breeds gathered under the general rubric of Turkish shepherd dogs (5). The characteristic features of Kangal and Akbash dogs are well known all over the world. However, Kars dogs were only reported for the first time by Nelson in 1996 (5).

The mean body weight and mean height at withers of Kangal dogs have been reported to be 40.5-41.0 kg and 66.2-71.1 cm for males and 32.4-35.8 kg and 60.8-66.9 cm for females, respectively (6-9). For the

Caucasian Ovcharka, the mean withers height, the index of format and the index of bone are reported to be 65-85 cm, 102-108 and 21-22 for males and 62-75 cm, 102-108 and 20-22 for females, respectively (2).

Kars dogs are strongly muscled and well boned. The head is large and mastiff and often has a dark fascial mask. Coat color is dark or light agouti gray, and it is lighter (light gray or yellowish) towards the tail and legs. Coat length can be long, medium or short. Ears are triangular and hang tight to the head. Eyes are brown or dark brown, medium-sized and oval (5).

This study was carried out to determine the body weight and some body measurements of Kars dogs.

### Materials and Methods

#### Animals

In the present study, 33 adult (2+ years old) male (Figure) and 27 female Kars dogs were used. The dogs were raised by different breeders in several different villages of the Kars region.



Figure. A male Kars dog

### Data

The dogs were weighed and their body length, head length, head circumference, distance between ears, wrist circumference, height at withers, chest circumference, chest depth, chest width, height at rump and rump width were measured using methods reported by Özcan and Altinel (8) and Tepeli and Çetin (9). Due to the common

practice of cutting dogs' ears in the region, the lengths of the ear-flaps were not included in the study.

Indexes of format and of bone were calculated by the formulas given below (2).

Index of format = body length x 100/height at withers

Index of bone = wrist circumference x 100/height at withers

Table. Means of body weight and some body measurements of Kars dogs.

Item	Sex		P-value <
	Male (n:33) $\bar{x} \pm S_{\bar{x}}$	Female (n:27) $\bar{x} \pm S_{\bar{x}}$	
Body weight, kg	35.3 $\pm$ 0.47	30.9 $\pm$ 0.38	0.01
Body length, cm	68.4 $\pm$ 0.56	62.3 $\pm$ 0.43	0.01
Head length, cm	30.6 $\pm$ 0.54	28.4 $\pm$ 0.55	0.01
Head circumference, cm	54.0 $\pm$ 0.58	50.4 $\pm$ 0.61	0.01
Distance between ears, cm	13.1 $\pm$ 0.19	12.2 $\pm$ 0.21	0.06
Wrist circumference, cm	13.3 $\pm$ 0.17	12.2 $\pm$ 0.12	0.01
Height at withers, cm	63.9 $\pm$ 0.43	61.4 $\pm$ 0.39	0.05
Chest circumference, cm	77.3 $\pm$ 0.92	71.6 $\pm$ 0.83	0.03
Chest depth, cm	26.1 $\pm$ 0.33	24.3 $\pm$ 0.42	0.05
Chest width, cm	17.5 $\pm$ 0.36	16.2 $\pm$ 0.34	0.04
Height at rump, cm	62.6 $\pm$ 0.61	60.3 $\pm$ 0.65	0.05
Rump width, cm	20.8 $\pm$ 0.45	18.6 $\pm$ 0.39	0.05
Format index	109.5 $\pm$ 0.78	103.6 $\pm$ 0.85	0.05
Bone index	22.3 $\pm$ 0.30	20.1 $\pm$ 0.37	0.05

### Statistical Analysis

Data were presented as the mean and standard error. The differences between the means of male and female dogs were analyzed by the t-test (10).

### Results

The Table shows the means of body weight and body measurements of the dogs. The body weight of males was higher ( $P < 0.01$ ) than that of females. All body measurements except for distance between the ears were significantly higher in males.

### Discussion

This study determined and registered the body weight and body measurements of Kars dogs.

The results obtained for the investigated characteristics in this study were lower than those reported for Kangal (6-9) and Caucasian Ovcharka dogs (2-4). This situation can be explained by the poor conditions under which Kars dogs are bred, and also Kangal dogs are classified as a heavy dog breed group. The means of the format index and the bone index in this study were similar to those reported for the Caucasian Ovcharka (2).

These findings will increase our knowledge of Kars dogs and will act as a literature source for subsequent studies. Other characteristics such as growth and reproduction need to be determined subsequently.

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