

## **Use of Pedometer to Assess the Requirement and Consumption of Calories by Service Dogs**

**Violeta-Elena SIMION<sup>1)</sup>, Monica PÂRVU<sup>1)</sup>, Florin FURNARIS<sup>2)</sup>**

<sup>1)</sup> Faculty of Veterinary Medicine, SPIRU HARET University, 47 Ma ina de Pâine Street, Bucharest, Romania, ushmv\_simion.violeta@spiruharet.ro

<sup>2)</sup> Faculty of Veterinary Medicine, University of Agronomical Sciences and Veterinary Medicine Bucharest, 105 Splaiul Independentei, Romania, ffurnaris@yahoo.com

### **SUMMARY**

The assessment of the type and amount of food given to dogs, the diet formulation and the evaluation of the intake of calories according to the physical work of the dog, are essential conditions to maintaining the health status and performance of the service dogs. The housing and climate conditions also play a major role in maintaining the health status of the dogs and in expressing their genetic potential.

The research used service dogs, German Shepherd breed, aged 1.6 to 9 years, which were observed and monitored during their performance of specific duties, without taking them out of the environment where they live and work. The requirement of energy and the amount of food required each day are calculated function of the body weight (BW) and of the intensity of the effort. The BW categories that were surveyed were: normal weight (40 kg BW, case A), over weight (50 kg BW, case B), and under weight (35 kg BW, case C). BMI evaluation (body mass index) was done according tot the international specifications, between 1 – emaciated, to 9 – very obese.

The analytical methods evaluated the chemical structure of the given food; the amount of dry commercial food required for maintenance according to the physical work; the consumption of calories of the dog function of the walked distance (expressed in meters and steps) during the physical work.

The consumption of calories during the physical work was calculated with a Dista T300 pedometer, which recorded the walked distance in terms of meters and steps, and the consumption of calories during the physical work.

$\text{Caloric consumption} = 0.14 * \text{caloric necessary} + 43.61 * (\text{travelled}) \text{ distance} - 7.57$

In this case, the caloric necessary and the (travelled) distance influence the caloric consumption by 99,86% and the result will be estimated with 4.51 error. Instead, if entries 1 and 3 are eliminated (because of the low number of kilometers, which statistically speaking could be considered extreme values), we can observe a decrease of the two factors' influence, but with a growth in the precision of the estimates.  $\text{Caloric consumption} = 0.05 * \text{caloric necessary} + 55.8 * (\text{travelled}) \text{ distance} - 115.23$

In this case, the caloric necessary and the (travelled) distance influence the caloric consumption by 98,42%.

The daily consumption of food of the dogs monitored with the pedometer was 593 Kcal in average, which requires an additional 167 g food per day, to the requirement for maintenance of 529 g food/day, giving a total of 696 g (40 kg average dog BW; 3.55 Kcal/g dry commercial food).

The results revealed that the permanent monitoring of the consumption of calories in the dogs making constant physical work, but different in terms of intensity and duration, may be of use for the fast adjustment of their feed requirement, which must meet the daily requirement of calories.