

## Determination of the serum zinc level in urban and rural dogs of Ahvaz district, Southwestern Iran

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### Abstract

Zinc is one of the most important nutrients in determining the appearance of the coat in dogs. Zinc deficiency occurs, most commonly as zinc responsive dermatosis, but zinc toxicity rarely occurs. The present study was conducted to detect the level of serum zinc concentration in urban and rural dogs of Ahvaz district, by atomic absorption spectrophotometry. A total of 250 serum samples of urban and rural dogs (clinically healthy) with different ages were randomly obtained. The classification was made by age, sex, breed and location. The dogs were divided into three groups based on age ( $\leq 1$  year, 1-3 years and  $\geq 3$  years). The mean and standard deviation of zinc concentration was  $1.21 \pm 0.04$  mg/l in the studied dog's population. The frequency distribution of zinc showed that serum concentrations were  $1.36 \pm 0.06$  and  $1.05 \pm 0.05$  mg/l in urban and rural dogs respectively. The mean and standard deviation of zinc was in the normal range in all samples ( $1.21 \pm 0.04$ ; 95% CI: 0.87-1.42). Serum zinc concentration was significantly higher in urban than rural dogs. Zinc concentration didn't show a significant difference for different ages ( $1.16 \pm 0.09$  less than one year,  $1.15 \pm 0.06$  between 1-3 years and  $1.27 \pm 0.07$  above 3 years), gender ( $1.41 \pm 0.10$  in males and  $1.33 \pm 0.08$  for females in urban dogs and  $1.06 \pm 0.07$  in males and  $1.03 \pm 0.08$  for females in rural dogs), and breed (the most level in Boxer breed =  $1.42 \pm 0.60$  and the least level in Bulldog breed =  $0.87 \pm 0.18$ ). The present survey showed that the serum zinc concentration was significantly higher in the urban than rural dogs which are probably due to the better diet.

**Keywords:** Zinc, Dog, Serum, Ahvaz

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