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Relationship Between Growth and Development of Sheep Wool and Goat Hair with Their Mineral Components and Some Biochemical Parameters in the Blood

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Abstract: This study aimed to determine the relationship between the growth of wool in sheep and hair in goats and their content of minerals, and some biochemical blood parameters. Twelve animals, six months old and about 20.85 kg body weight including, Arabi lambs and six local goats. Wool and hair characteristics, as well as the concentration of Zn and Cu in the shoulder and hip region, were measured. The results revealed an increase in Zn content in the wool and hair at the third month of the experiment, and the increase was proportional to both shoulder and hip areas. In sheep, a significant correlation was recorded between the weight of clean wool and the length of the staple in the shoulder region. In the hip region, there was a significant correlation between the weight of the crude and clean wool. While in goats, a significant correlation was recorded in the shoulder region between the weight of the crude hair and the length of the staple. Also, a highly significant correlation was recorded in the hip region between the weight of the crude hair and the weight of the clean fleece. Highly significant correlations between cholesterol concentration and both of fiber length in the shoulder and crude, clean wool weight in hip areas. In goats, a significant correlation was recorded in the shoulder and hip region between glucose concentration and clean hair weight. Therefore, it can be concluded that there are significant correlations between the wool and hair production and some biochemical blood parameters.

Keywords: Blood parameters, Copper , Hair, Wool , Zinc**.**

Introduction

Arabi sheep are distinguished by their production of long and hard wool, which makes them good in the textile industry (Taherpour *et al*., 2012).Wool and hair parameters of the local sheep and goats are affected by several factors, including the age, weight, season, and feed content of amino acids and vitamins (AL- Jassim *et al.,* 2006; Kassim *et al.,* 2019; Kassim & Al-Helou, 2024),and minerals. In particular, copper and zinc are important in maintaining the properties and production of wool. (Anna *et al*., 2019;Erika *et al*.,2020). . In the early sixties of the last century, the mineral analysis in the hair was utilized for the first time to evaluate the mineral status in humans as an indicator for trace elements in 1990 (Bencze, 1990; Dombovári & Papp, 1998; Chyla & Zyrnicki, 2000). The hair could be used to estimate trace and major elements, toxic elements, and even drug residues over long