

# STUDY THE EFFECT OF ADDING DIFFERENT LEVELS OF BLACK RAISIN JUICE POMACE ON THE HEMATOLOGICAL, BIOCHEMICAL AND GROWTH CHARACTERISTICS OF AWASSI SHEEP

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### Abstract

The importance of this study is to use fodder alternatives with certain replacement ratios in order to increase fodder prices globally. This study has been proposed to investigate the effect of adding different quantities of currant pulp to the feed intake on body weight and some physiological blood measurements in Awassi ewes.

The study was conducted at the Agricultural Technical College/Northern Technical University, for the period from 12 October to 22 November 2020, to evaluate the possibility of use different quantities of raisin pulp feeding ewes and its effect on body weight change and blood parameters. Twenty Awassi ewes were used in this study, with average weight of  $42.98 \pm 0.94$  kg, and age 3 - 4 years. Ewes were divided into four treatments, each of (5) animals, were fed with 250 g of crushed barley grain and 500 g of wheat straw per ewe daily. First treatment was control (T1) fed without additive, while 200, 400, and 800 g/day of air-dried raisin pomace were fed to the ewes in T2, T3, and T4 respectively. During the study period, the ewes were weighed using a sheep scale every two weeks to follow up weight change. At the end of the study ten milliliter of blood was drawn from the jugular vein from each ewe. 2 - 3 mL were added to a test tube contained an anticoagulant in order to perform blood picture using a Genex system (LLC company). The remaining was used for serum separation (using a centrifuge with 3,000 r/min.) for 20 minute, and then the serum was analyzed for: glucose, proteins, cholesterol and enzymes using a ready-made analysis kit manufactured by the Biolabo company via by a spectrophotometer (Biotech Engineering Management). Data were analyzed using general linear models (GLM) procedure of Statistical Analysis System (SAS).

The results showed that the addition of currant pomace in the amount of 200 g/ewe in the T2 gave a similar gain - 142 g/day as compared to control (T1) 133.7 g/day, and that the higher quantities in T3 and T4 caused a significant (P < 0.05) decrease in the weight gain 67.20 and 103.60 g/day respectively. While the blood glucose level accompanied by a decrease in plasma albumin increased significantly (P < 0.05) for both treatment T3 and T4 compared to treatment T1 and T2, a significant increase (P < 0.05) in the concentration of AST and ALT enzymes was observed in treatment T4 compared to other treatments (T1, T2, T3). Adding currant pomace led to significant (P < 0.05) higher in the number of white blood cells and lymphocytes and a decrease in neutrophils, especially in the T2 and T3 when compared to the T1 and T4. It appeared from the results that using raisin pulp with 200g/day is suitable for ewes without adverse effect in body weight or may be productive performance.

The data in this study agree with the previous studies in those that high levels of industrial or agricultural wastes high in phenols negatively affect production performance and that feeding with moderate amounts can achieve the desired results. With regard to currant pulp, we can recommend the use of 200 g/ewe per day as an alternative to fodder.

Key words: Currant pomace, Weight gain, Blood hematological, Ewes.