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EFFECTS OF USING DIFFERENT LEVELS OF BREAD WASTAGE ON GROWTH PERFORMANCE OF MOGHANI LAMBS

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ABSTRACT

The purpose of the study is to investigate the effects of different levels of food waste on performance of Moghani fattening lambs. In this experiment, 40 male lambs of 63/27 kg body weight, and age 3 to 4 months in a completely randomized design with 4 treatments and 10 replications were used for 70 days. The diet has a 2.5 mega calories energy and protein per kilogram, that was adjusted and supplied with food items like hay, straw, wheat, soybean meal, corn, barley grain, mineral supplements - vitamin and salt. Experimental treatments were: 1) a control diet without bread waste, 2) diet containing 10% bread waste, 3) diet containing 20% bread waste, and 4) diet containing 30% bread waste. Although, The results indicated that using different levels of bread waste in this study had significant effect on dry matter intake of fattening lambs in different breeding periods, The independent comparison of treatment mean with no bread waste (control) vs treated with bread waste represents a significant difference between them and percentages, treatment performance with 30% of bread waste was significantly higher than other treatments ($p \leq 0.05$).

KEY WORDS: Moghani lamb, Bread waste, Performance

INTRODUCTION

Food supply has long been one of the most important natural human need and problems that historically have been grappling with humans. The goal of all animal breeders is achieving optimal production and income to meet the needed food of a growing world population. Therefore, nutrition factor is more important than anything else in achieving them (Nik khah et al. 2003). Feeding has an important role in economy and dynamics of the sheep industry, consequently, identifying available food resources and also proper use of these resources in order to increase the efficiency are key priorities of the industry (Fard et al. 1971). Generally, sources of dietary carbohydrates, thus providing necessary energy to produce livestock, therefore, getting the vast amount of resources that have slow fermentation and high efficiency and without making any digestive problems are very effective. Since in fattening units costs grow 60 to 70 percent of diet is for nutrition, appropriate methods should be use to increase efficiency and reduce production costs through improve power management and increase the digestibility and absorption of food items in the fattening feed (Parizad et al. 2008). According to statistics, sometimes up to 30% of bread is turn into waste. Due to the high volume of bread consumption in our country, approximately three hundred million dollars of the country's wheat production will be lost (Schroeder, 1991). Almost all

of bread waste feed by cattle as dry matter are as only part of compensation for the loss caused to the countries by cereal compensation. Bread in contrast with meat or milk is a source of more intensive energy, because every 100 grams of bread, produce 247 kcal of energy, while in order to provide same amount energy of flesh, should 190 g of that (approximately 2-fold) and 370 m liter milk(about 4 fold) should use (Champe and Church, 1980). Intake of micro-nutrients such as zinc, thiamin, iron, and calcium of bread is remarkable, while its high degree of extraction and amount of fiber in Iranian breads, particularly the availability of iron and zinc are called into question (Sattari et al. 2009). Grade of flour extraction, fermentation and baking (baking time and temperature) on the availability of nutrients, especially iron, calcium and zinc is effective, consequently, enhancing the nutritional value and improving the food quality of bread, fermented with appropriate methods of traditional and industrial is recommended in process of bread production (Getachew et al. 2002).

MATERIALS AND METHODS

- **Experimental materials and preparation of diets:**

In this experiment, 40 Moghani lambs race were used with an average initial weight 63/27 kg. Prepared diets for experimental diets in accordance with standard tables NRC (1985) calculated by computer software of UFFDA. Totally, 4 experimental diets were used during testing. The chemical composition of diets, including metabolizable energy 2.5, raw protein 14.7, Ca 0.51, P0.24, ADF 19.2 and NDF 29.64, and the Food Ingredient Diets based on a 100% dry matter were (dry hay 34/5% - 12% wheat straw - soybean meal 3.75% - 19% corn - mineral and vitamin supplements 0.5% and salt 0.25% that in different treatments have different percentages of bread waste.

- Evaluated traits: amount of feed intake, body weight gain, feed conversion ratio.
- Experimental design and statistical models were used to investigate the effect of different levels of bread waste on performance of fattening lambs to run this research by completely randomized design. Also a statistical model was used in order to compare the means Duncan's multiple range test in 5% aptness that it is as follows:

$Yij = u + Ti + Eij$
Each of test observations: Yij
Average of society: U
effect of experimental groups: Ti
Experimental error, Ei: j

RESULTS AND DISCUSSION

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Table 1: compared daily weight gain of lambs (kg), dray matter intake (kg) and FCR in whole breeding period

(%)CV	SEM	Treatment content of seed 30% of bread waste	Treatment content of seed 20% of bread waste	Treatment content of seed 10% of bread waste	Control treatment	Kind of treatment / Trait
2.52	0.182	^{A} 0.268	^{B} 0.228	^{C} 0.2	^{B} 0.22	Daily weight gain
1.92	0.0182	^{A} 1.36	^{A} 1.35	^{A} 1.33	^{A} 1.34	Dry matter intake
3.21	0.111	^{C} 5.23	^{B} 5.92	^{A} 6.65	^{B} 6.122	Feed Convertion

Different letters indicate significant difference between means ($p \leq 0.05$).

Daily average weight gain (kg) during the entire period of investigation is shown in Table 1. Differences in daily weight gain means between treatment with 30% bread waste and other treatments is significant at the 5% aptness level. And the difference between control and 20% bread waste was pointless and the lowest daily weight gain was for treatment of 10% bread waste. It shows that use of bread waste different levels had no effect on DMI in fattening male lambs. The best FCR is for the treatment of 30% bread waste (5/23). The mean difference between control treatments and feed conversion ratio and treatment contains 20% bread waste at 5% aptness level was pointless and worst conversion ratio (6/65) was for treatment of 10% bread waste.

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