Surveying the Effects of Different Levels of Monensin on Performance of Masal Local Lambs

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ABSTRACT

This study was carried out to study the effect of monensin on performance of Masal local lambs. Twenty-four male Masal lambs with mean body weight of 31.83±0.94 kg and in completely randomized design with 4 treatments, and 6 repetition used during 84-day. The applied treatments were: (1) control diet (without monensin), (2) 10 mg monensin per kg of diet dry matter, (3) 20 mg monensin per kg of diet dry matter, and (4) 30 mg monensin per kg of diet dry matter. The results indicated that monensin has increased average daily gain in lambs fed monensin in comparison with control group. Average feed consumption was significantly different between experimental treatments, treatments containing 10 and 20 mg monensin highest rate and controls and 30 mg monensin have lowest amount ($p \leq 0.05$).

Keywords: Masal lamb, Monensin, Dry matter intake, Performance

INTRODUCTION

Additives are substances that are added in small amounts to the main meal or generally are non-nutritious products that affected use of food or animal production performance. Among diet food additive to fattening livestock can be mention ionospheres. Ionospheres due to properties of transport ion are known to this name [1]. The general mechanism of ionospheres is saving important components of food, such as proteins, vitamins and some minerals. Ionospheres motivations are able to change displacement status in biological membranes and cause less production acetate and methane of rumen and more production of propionate [2]. These compounds have high dry matter digestibility of feed protein and its role in facilitating and circulation ions from the lipid membrane of the bacteria and protozoans widely used in the livestock industry. Among the ionospheres monensin and Lasalocid have been approved as livestock feed additives by General Administration feed and medication. Economic advantages of using monensin include improving food efficiency, weight gain and decreasing the incidence of disease and mortality [3]. In addition, monensin stimulates enzyme system types, loss gastrointestinal disorders, disease control and stimulate microorganisms in the digestive tract and as a result, with a better synthesis of nutrients and enhance the absorption of nutrients from the digestive system, improves the weight gain of fed cattle with monensin [4].

MATERIALS AND METHODS

24 local Masal male lambs with an average initial weight of 31/83 ± 0/94kg were used (μ ± SD) to perform this experiment. In early experiments, lambs were divided into 4 groups of 6 cows based on their live weight or were identified with numbered ear. Then each group was given an oral

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treatment. Then a meal treatment was given to each group. The studied fattening traits are (1) Daily weight gain, (2) Used DMI on day, and (3) Feed conversion ratio.

Preparing food diets

Experimental diets adjusted by computer software UFFDA1. Lamb-food items and nutritional requirements are derived and applied from NRC2 (1985) tables. Generally, four experimental diets were used during testing. Amount of metabolizable energy and crude protein content of all experimental diets were formulated using the same. It is noteworthy that after preparing food diets are transferred to rearing and then they were weighed daily. Lambs nutrition in tow pre-trials (habituation period) for 14 days and the main stage for 70 days performance and during the test three times; morning, noon and afternoon fed with completely mixed rations and residual and pert of per repetition before the next day meal collected and weighed. During the experiment, water was freely available for lambs.

Experimental design and statistical models

A randomized design according to the following statistical model and for data analysis SAS [5] software were used to perform this study and Duncan's multiple range test to compare means [6] used at the 5% likely level: $Yij=\mu+Ti + \varepsilon\neg ij$

RESULTS AND DISCUSSION

According to the results of this study, the use of monensin on daily gain in lambs fed with monensin increased in comparison with controls, the highest daily weight gain and best feed conversion ratio is for sample containing 20 mg monensin and the lowest to control treatment. The average feed intake was significantly different between treatments so that, treatments with 10 and 20 mg monensin have highest level of control and 30 mg monensin lowest amount ($p \leq 0/05$) (Table 1, 2 and 3).

Table 1. Diets food ingredients (based on 100% dry matter).

Dry matter name	Amount in diet (dry matter percentage)			
	Control	1	2	3
Hay	20	20	20	20
Wheat straw	13	13	13	13
Soybean meal	6.25	6.25	6.25	6.25
Corn bean	13	13	13	13
Barley corn	27	27	27	27
Sugar beet residuum	9	9	9	9
Wheat bran	6	6	6	6
Vitamins and mineral supplements	0.05	0.05	0.05	0.05
Salt	0.25	0.25	0.25	0.25
Monensine (mg/kg dry matter)	30	30	30	30

Table 2. Chemical component of experimental diets.

Name of chemical component	Control diet	Diet 1	Diet 2	Diet 3
Metabolizable energy (Mcal/kg)	2.6	2.6	2.6	2.6
Raw protein (%)	14.7	14.7	14.7	14.7
Calcium (%)	0.48	0.48	0.48	0.48
Phosphor (%)	0.33	0.33	0.33	0.33
ADF[1] (%)	21.46	21.46	21.46	21.46
NDF[2] (%)	30.24	30.24	30.24	30.24

[1]User friendly food formulation done again; [2]National Research Council

Table 3. Comparison of average daily gain (kg), DMI (kg) and feed conversion ratio in whole breeding period.

Trait	Type of treatment				SEM	CV (%)
	Without rice bran as control	With 10% rice bran	With 20% rice bran	With 30% rice bran		
Body weight gain	0.133C	0.153B	0.187A	0.135C	0.189	3.52
Dry matter intake	1.27B	1.35A	1.36A	1.25B	0.204	2.17
Feed conversion ratio	9.55B	8.8B	7.25A	9.2B	0.218	4.62

Different letters indicate significant differences between the means ($p \leq 05$).

It should be noted that the use of monensin causes a change in the proportion of propionic acid in relation to volatile fatty acids decreased production of and methane production in the rumen. Efficiency and thus raises beef cattle. In the case of carbon and energy reinstated to meet increased metabolic animals. Propionic acid and heat production due to an increase of less than acetate greater efficiency of feedlot cattle placed. Propionic acid increased as a result of the effect of monensin may be used in the process of gluconeogenesis, resulting in the consumption of amino acids [7]. It also reduces feed intake and feed conversion in cattle is the result. Reduced feed consumption of animals fed with monensin is because of that monensin increased feed efficiency. As a result animal regulate feed consumption as much as to supply its power [8]. Monensin also reduced rumenal movements, thus providing a physiological rationale for filling the digestive system and there will be a reduction in food intake [9].

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