Effect of add exogenous fibrolytic enzymes to the ration in some characteristics of blood biochemicals of Awassi lactating ewes

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Abstract

The experiment was conducted in the field of animal production of the research ruminants- Office of Research- Ministry of Agriculture in the region of Akrokov 25 km northwest of Baghdad for the period from 16/3/2016 to 4/6/2016, and the objective of the experiment was the effect of addition of different levels of fibrolytic enzymes. The concentrate diet on some characteristics biochemical blood lactating Ewes Awassi, In the first experiment, 26 pregnant sheep were used In the late stage and before birth and at the age of 3-5 years, With a weight of 67 kg, The first experiment lasted 42 days preceded by 10 days introductory period The ewes were divided into four groups, each with 6 ewes, of which 15 were born, Treatment control 3 ewes, first treatment 5 ewes, second treatment 4 ewes, third treatment 3 ewes, The trial period was divided into three successive periods from birth every 14 days, The first period of 0-14 days and the second period of 15-28 days and the third period of 29 to 42 days of the milk cycle began, Control group without enzyme and treatment of the first, second and third enzyme concentration 1,3,5 kg/t respectively. The preliminary period is 10 days ahead, The results showed that: The addition of fibrolytic enzymes to the cencenterate diet of the fodder resulted in Significant increase ($P<0.01$) was observed at the general rate of concentration of urea, The concentration of urea was significantly increased only in T3, while cholesterol was significantly higher in all treatments compared to the control treatment. And significantly increased triglycerides in T2 compared to all other treatments. Very high-density lipoprotein was increased in T1 treatment with control treatment C, as well as significant increase ($P\leq0.05$) high-density lipoprotein in treatment T1 compared to treatment control C and the recording of high-density lipoprotein (HDL) significantly higher in T2 compared to all treatments triglyceride, and very high-density lipoprotein, ($P<0.05$) for high density lipoprotein (LDL) and low-density lipoprotein. LDL was significantly increased in T3 compared to T1. The serum AST (T3) was significantly increased in T3 compared to T2, T1 in the serum of lactating ewes.

Keywords: lactating ewes, fibrolytic enzyme, characteristics biochemical blood
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تأثير إضافة الأنزيمات المحللة للألياف إلى العليقة على بعض صفات الدم الكيموحيوية في النعاج العواسي الحلوب

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الخلاصة

أجريت التجربة في حقل الانتاج الحيواني التابع لمحطة بحوث المجترات– دائرة البحوث الزراعية– وزارة الزراعة في منطقة عكركوف 25 كم شمال غرب بغداد للفترة من 3/16 /2016 ولغاية 2016/6/4. وكان هدف التجربة دراسة تأثير إضافة مستويات مختلفة من خليط الأنزيمات المحللة للألياف Safazym المتكون من B- glucanases, Cellulases, Xylanases إلى العليقة المركزة على بعض صفات الدم الكيموحيوية للنعاج

العواسي الحلوب. استخدمت في التجربة 26 نعجة حامل في المرحلة الاخيرة من الحمل قبل الولادة بعمر 3–5 سنة وبمعدل وزن 67 كغم. استمرت التجربة الأولى 42 يوم لكل نعجه حلوب سبقتها 10 أيام فترة تمهيدية وقسمت النعاج على اربع مجاميع كل مجموعة مكونة من 6 أو 7 نعاج ولدت منها 15 نعجة معاملة السيطرة C 3 نعاج، المعاملة الأولى T1 5 نعاج، المعاملة الثانية T2 4 نعاج، المعاملة الثالثة T3 3 نعاج، أما الـ9 نعاج الأخرى فتبين أنها غير حامل بعد الفحص بالسونار ولقد هلكت نعجتان قبل الولادة من معاملة السيطرة والمعاملة الثانية، وضعت النعاج في أقفاص التجربة الفردية، مجموعة السيطرة C بدون إنزيم والمعاملة الأولى T1 والثانية T2 والثالثة T3 تركيز الإنزيم 3، 5، 1 كغم/ طن من العلف المركز على التوالي مع تبن الشعير، وقسمت فترة التجربة إلى ثلاث فترات متتابعة منذ الولادة كل فترة 14 يوم، الفترة الأولى من 0–14 والفترة الثانية من 15–28 والفترة الثالثة من 29–42 يوم من بدأ دورة الحليب. أظهرت نتائج الدراسة ان إضافة الأنزيمات المحللة للألياف إلى للعليقة المركزة للنعاج الحلوب أدت إلى حدوث فروقات معنوية $P\leq0.01$ في المعدل العام لصفات الدم البيوكيميائية لكل من تركيز اليوريا ارتفعت معنويا فقط في المعاملة T3 في حين ارتفع الكولسترول معنوياً في كل المعاملات مقارنة بمعاملة السيطرة وارتفعت معنوياً الكلسريدات الثلاثية في T2 مقارنة مع كل المعاملات الأخرى وارتفع البروتين الدهني عالي الكثافة جداً في المعاملة T1 مع معاملة السيطرة C، وكذلك ارتفاع معنوي $P\leq0.05$ البروتين الدهني عالي الكثافة في المعاملة T1 بالمقارنة مع معاملة السيطرة C وسجل البروتين الدهني مرتفع الكثافة جداً ارتفاع معنوياً بالمعاملة T2 مقارنة مع كل المعاملات أما البروتين الدهني المنخفض الكثافة ارتفع معنوياً في المعاملة T3 قياساً إلى T1 وازداد معنوياً تركيز إنزيم الاسبارتين ناقل الأمين (AST) في المعاملة T3 بالمقارنة مع T2,T1 في مصل الدم للنعاج العواسي الحلوب.

الكلمات المفتاحية: النعاج الحلوب، الأنزيمات المحللة للألياف، صفات الدم البايوكيميائية.

Introduction

The acute shortage of animal feedstuff has led to a difference between the needs and available resources, which has led to the planning and increasing efficiency of feedstock, The problems of feeding on agricultural waste are low protein content and high fiber content which contains low energy It is rich in lignin, silica and ketane, which limits the fermentation of carbohydrates and negatively affects the production of volatile fatty acids and microorganisms activity in the rumen (1,2). Carbohydrates are the main component of ruminant feed and a primary source of energy in roughage rations, contributing 46-70% of the energy for milk production. In order to increase the vital value of ruminant feedstuff and improve productivity(3), cereals have been used more since the ban on the use of animal protein sources in 2000 (4), However, the increase in the proportion of the rates of more than 61% caused some obstacles, the most important high cost and competition with humans and the rise of digestive problems Reduction of fiber digestion and changes in chemical composition of milk such as low fat content and qualitative changes in carcass These problems account for approximately 28-33% of pregnancy deaths for ruminants in the United States (5, 6) forage are used as the sole source of feedstuff for ruminants in many parts of the world because of their availability and low cost. However, they are not available throughout the year and are of the same quality, In the tropical and subtropical regions, seasonal fluctuations throughout the year led to a lack of forage and rangelands, an increase in the cost of animal production and a decline in the performance of ruminants(2). The areas of agriculture and grazing in Iraq and most third world countries are very limited(7). Although roughage especially poor quality, is the cheapest way to feed ruminants but affects the performance of sheep milk When used as a single source of

nutrition for the reduction of essential elements that are not sufficient to meet the needs of milk production when nursing lambs(8, 9), In order to increase fiber digestion it is important to break the bonds between cellulose, hemsellose and lignin by mechanical methods or biologics (8, 9). The addition of fiber-extracting enzymes to the diets of biological methods, accompanied by increased feedstuff consumption, palatability, high fiber decomposition, and increased number of microfluid microorganisms in the rumen environment(10,11). The sheep Awassi distinctive in the production of milk in addition to the production of wool and meat, that is three-purpose and there are several factors affecting the production Such as environmental conditions, the quality and quantity of feed available, the management systems used and genetic factors, and the estimation of the economic yield of milk production of sheep depends on the chemical composition of milk Biochemical properties of blood have a direct effect on the chemical composition of milk. Due to the lack of studies on milking sheep and the effect of lipid enzymes on the biochemical properties of blood The study was carried out using external enzymes to analyze the fiber to determine the biochemical properties for blood of the ewes in Iraq.

Materials and Methods

The experiment was conducted in the field of animal production of the research plant of the ruminants-office Agricultural Research-Ministry of Agriculture In Akurkof, 25 km northwest of Baghdad. The first experiment for ewes started on 16/3/2016 and ended on 16/5/2016, including The second trial began on 17/5/2016 and ended on 4/6/2016, including the preliminary period. The preliminary period was 10 days for each trial. Twenty-six Turkish ewes were used in the prenatal stage with a mean weight of 67 kg and their ages ranged from 3-5 years Distributed to four groups randomly on individual cages, ewes were placed with their newborns in a shaded shed and distributed to 26 Individual pens with 1.75 m × 1.85 m dimensions for both experiments. Following the individual breeding method for the first and second experiments, each cage is equipped with a 5 kg concentrate. And another in which the roughage is placed in the hay and each cage is equipped with metal containers to put 15 liters of water. Experimental animals were placed under veterinary care as per the health program of the plant and field operations were carried out From mowing wool and trimming the dummies and dipping, and perished 2 of prenatal ewes, the first treatment of C and control And the second treatment of the second T2 and after the autopsy revealed that the cause of the loss of the existence of nylon bags with crash. Concentrate components were provided for the experiment of the ruminant research station for the duration of the experiment and the ingredients of the two jars were washed and the enzymes were added to the fibers by 1 kg per ton For the first treatment, 3 kg/ ton for the second treatment and 5 kg/ ton for the third treatment and was mixed according to the specified percentages of the fibrolytic enzymes. Safizym®-France XP1000 Consisting of a mixture of Xylanase enzymes, B-glucanase, Cellulase by 5000, 1250000, 1400000 IU/ kg respectively and the record of *Longibrachiatuh Trichoderma* mushroom.

Table (1) lactating ewes in the experiment

Components	Diet (1) %	Diet(2) %
Cereal barley	40	40
Wheat Bran	25	24
Yellow maize grain	25	25
Soybean Meal	8	8
Table salt	1	1
Calcium carbonate	1	2
Total	100	100

Experimental animals for feeding were divided into three classes of weight, which were provided for preterm delivery of the first pre-natal diet and calculated on the basis of needs coverage, The second diet was given to the milking ewes after parturition and was calculated on the basis of coverage of the food needs and according to the type of birth and the weight group for each lactating ewes, Roughage is made up of Barley Straw and is 1.5% of the body weight of the animals for animals and on the basis of dry matter, A mixture of French-made vitamins and minerals was added to the concentrated and according to the needs of lactating ewes to compensate for vitamin a deficiencies, other vitamins and certain mineral elements. The coefficients of the control treatment experiment were C= concentrate -free center of the fibrolytic enzyme+ barley straw, First treatment T1 = concentrate diet with 1 kg/ ton fibrolytic enzyme+ barley straw, Second treatment T2 = concentrate diet with 3 kg/ ton fibrolytic enzyme+ barley straw, Third treatment T3 = concentrate diet with 5 kg/ ton fibrolytic enzyme+ barley straw Ewes were distributed to four groups of 6 or 7 ewes for each treatment, after which 3 ewes were born for control treatment, 5 ewes for the second treatment, 4 ewes for the third treatment, 3 ewes of the fourth treatment, The other ewes were examined 20 days after the experiment began sonar to confirm the status of physiological by a cadre specialist from the faculty of veterinary medicine and research and found it is not pregnant. The concentrated diet was provided in the form of one meal a day at 8 am and according to the nutritional needs of each wafer and its weight group provided the quantity. The straw was introduced after 9 am and the quantity provided for each treatment was adjusted weekly and the residual of the concentrated diet was weighed And roughage the next morning to calculate the intake of concentrated and roughage and switch the water provided on the second day with clean water throughout the experiment. Before taking the measurements, animals were introduced during the 10-day pretrial period to remove the effect of pre-experimental lactating ewes, the ewes on the new experiment lactating ewes were in good health throughout the experiment. 16 mL of blood was pulled through the jugular vein for the lactating ewes in the experiment and for the first three period of the first stage, the first 14 days after the birth and the second stage 14 days after the first stage to represent the middle of the experiment and the third stage after 14 days of the second stage represents the end of the experiment, It was combined with a vacutainer needle to collect blood with vacuum tubes of the vacutainer tube and used tubes free of anticoagulant, which collected 8 ml of blood left at room temperature for the tests of the serum and was the type of container gel for the purpose of reducing the process of decomposition of blood and to facilitate the separation of the largest amount of serum and prevent the spread of adhesion to the walls of the tube to estimate glucose, total protein according to method Biuret Using several kit by a linear Spanish company, albumin kit Bromo Cesol Green, globulin, cholesterol kit spinreact company , urea kit BioMerienx and estimate HDL kit from Biosystem company, VLDL, LDL Arithmetically and Liver enzymes AST, ALT kit from biolabo-France, and was transferred immediately after the collection to the laboratory of the advisory office of the Faculty of Veterinary Medicine/ University of Baghdad to carry out all analyzes of blood biochemical.

Results and Discussion

- **Characteristics of biochemical blood (SG):** Table 2 shows no significant differences between the treatments after the third period. The results showed significant effect ($p \leq 0.01$) concentration of serum glucose of the lipid enzymes when added to the center for milking ewe on the concentration of serum glucose by the superiority of all treatments on the control treatment C. Periods showed that the results of Table 2 showed a significant improvement over the first period of T1, T2

and T3. After transient carbohydrate degradation of the rumen enzymatically absorbed through the intestinal wall into the bloodstream while a large part of it is fermented in the rumen to form volatile fatty acids that absorb and reach the liver (9). They are metabolism to glucose and are considered the primary fatty acid propionate and the main source of glucose in ruminants contributes to the composition of 27-55% of glucose (9). This study did not agree with studies (10, 11, 12, 13).

Table (2) Effect of the addition of fibrolytic enzymes at different levels of concentrated diet Lactating Ewes on serum glucose concentration (mg/ l)

Periods	Treatments				Moral level
	T3	T2	T1	C	
The first period (1-14) days	B 5.54 ± 34.1 a	B 13.7 ± 39.1 a	C 5.38 ± 33.7 a	A *8.38 ± 47.6 a	N.S**.
The Second period (28-15) days	AB 7.31 ± 59.9 a	AB 9.99 ± 57.4 a	B 6.35 ± 58.6 a	A 7.20 ± 45.5 a	N.S.
Third period (29-42) days	A 9.11 ± 83.2 a	A 5.49 ± 81.9 a	A 6.32 ± 96.9 a	A 6.53 ± 43.6 b	0.01
General Average	14.1 ± 59.09 a	12.7 ± 56.8 a	18.5 ± 62.8 a	1.15 ± 45.6 a	N.S.
Moral level	0.01	0.05	0.01	N.S.	

C: Treatment of control without enzyme. T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.

**N.S. Not significant.

*Values represent the average ±standard error.

- **Blood Urea Concentration (BU):** Table 3 show a significant effect at ($p \leq 0.05$) to addition the fibrolytic enzymes to the concentrated lactating ewes on serum urea concentrations in the second period with a higher T3 treatment level on all treatments. Table 3 shows significant effect of ($p \leq 0.01$) on serum urea concentration at the highest level of T3 treatment on all treatments in General a verge. There are no significant differences within the treatment during the trial period. The high concentration of urea in the blood of the treatment reflects the imbalance in the metabolism of ammonia within the spraying of ewes and the inability of microorganisms to benefit from the source of energy and the source of nitrogen, which adversely affects the production of microbial protein, resulting in a lack of nutrients and access to the direction of catabolism (13). The lack of degradable protein in the rumen leads to decreased digestion of fiber and dry matter intake (DMI) and production performance The reason is the low number and activity of microorganisms (14). The analysis of the protein found in food leads to the formation of ammonia (NH3) as a final product, and the surplus of the microorganisms in the environment of the rumen is induced in a way that causes a waste of energy (15, 16) It is an important indicator and indicator of the level of protein intake and its degree of analysis as well as the process of nitrogen metabolism and the efficiency of utilization of energy consumed because the process of forming a single molecule of urea requires four molecules of ATP (17), The higher urea Indicates of the blood to the lower the efficiency of utilization of ammonia inside the rumen (18) did not agree with the study (10, 12, 13), and the concentration of urea in the serum within the normal rate.

- **Total Protein Concentration in Blood Serum:** Table 4 shows no significant effect on the concentration of serum protein between the experimental parameters here was no effect on the overall mean. As for the periods, the results in Table 4 showed an effect on the addition of dietary enzymes The concentrated lactating ewes had a serum protein concentration fibrolytic with the first period significantly increasing ($p \leq 0.01$). In the total protein concentration on the third period in the second treatment T2 and did not differ significantly from the second period. The decrease in the concentration of total protein in blood plasma is due to the increased representation of NH3 in the rumen of microorganisms for the purpose of manufacturing microbial protein (7) This is not consistent with (12, 13).

Table (3) Effect of addition of fibrolytic enzymes at different levels of concentrated lactating ewes on concentration diet of urea serum (mg/ ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *38.6 ±6.27 a	A 52.1 ±6.41 a	A 51.1 ±8.95 a	A 71.9 ±16.7 a	N.S**
The Second period (28-15) days	A 45.3 ± 3.70 b	A 52.2 ±3.37 b	A 53.5 ±5.93 b	A 69.9 ±6.03 a	0.05
Third period (29-42) days	A 53.2 ±2.96 a	A 62.4 ±11.8 a	A 56.8 ±8.33 a	A 72.6 ±3.81 a	N.S
General Average	45.7 ±4.22 b	54.7 ±3.93 b	53.8 ±1.65 b	71.4 ±0.813 a	0.01
Moral level	N.S	N.S	N.S	N.S	

C:Treatment of control without enzyme. T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error.

Table (4) Effect of the addition of fibrolytic enzymes at different levels of concentrated lactating ewes on serum total protein concentration (gm/ 100 ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *7.81 ±1.98 a	A 7.27 ±1.37 a	A 11.10 ±0.758 a	A 10.27 ±1.39 a	N.S**
The Second period (15-28) days	A 7.24 ±1.20 a	A 8.19 ±1.26 a	AB 9.50 ±0.479 a	A 9.42 ±0.798 a	N.S
Third period (29-42) days	A 7.95 ±0.533 a	A 8.91 ±1.20 a	B 7.39 ±0.809 a	A 8.11 ±1.17 a	N.S
General Average	7.67 ±0.214 a	8.15 ±0.444 a	9.33 ±1.07 a	9.26±0.628 a	N.S
Moral level	N.S	N.S	0.01	N.S	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error

- **Total Albumin Concentration in Blood Serum:** Table 5 shows no significant differences in the addition of fibrolytic enzymes to the concentrated diet of the lactating ewes on serum albumin concentrations between the coefficients and control And also at the general average. For periods, control C of showed significant differences ($p \leq 0.05$) The proportion of albumin in the third period on the first period did not differ significantly from the second period and the study agrees with study (12, 13). The concentration of albumin in the serum is an indicator of the ability of the liver to manufacture protein and that the low percentage of albumin evidence of damage in body or damage to the liver or tissue may be the cause of hormonal changes start the stage of milk or increase the representation of ammonia in rumen and poor digestion and malnutrition diseases (20).

Table (5) Effect of addition of fibrolytic enzymes at different levels of concentrated lactating ewes on serum albumin concentration(gm/ 100 ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	B 2.01±0.116* a	A 3.05 ±0.991 a	A 3.53 ±1.14 a	A 2.37 ±0.363 a	N.S**
The Second period (15-28) days	AB 5.14 ±1.49 a	A 3.40 ±0.480 a	A 4.55 ±0.499 a	A 3.20 ±0.580 a	N.S
Third period (29-42) days	A 6.34 ±1.19 a	A 4.16 ±1.47 a	A 5.70 ±0.652 a	A 2.70 ±0.834 a	N.S
General Average	4.39 ±1.26 a	3.54 ±0.328 a	5.09±0.790 a	2.75 ±0.241 a	N.S
Moral level	0.05	N.S	N.S	N.S	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
N.S. Not significant.
Values represent the average ±standard error.

- **Total Globulin Concentration in Blood Serum:** Table 6 shows the significant effect of $p \leq 0.05$ to add the fibrolytic enzymes to the concentrated of the lactating ewes on the concentration on serum globulin With all the coefficients of the control treatment C in the second period, while the third period was significantly higher than ($p \leq 0.05$) The third treatment T3 on the second treatment T2 was not significantly different from the first treatment T1 and the control treatment C, The cause may be due to changes during the Parturition and the beginning of milk cycle for lactating ewes in the experiment, The effect of periods for each treatment was significantly higher than $p \leq 0.05$ during the first period in the second treatment T2 on the third period with the concentration of the total and did not differ significantly from the second period. The high concentration of globulin in the blood is the result of liver diseases or diseases of the lymphatic system and infectious diseases parasitic and diseases of the immune system, while the lack of concentration of the blood globoulin result from diseases of malnutrition and leukemia or lymphatic disorder (21).
- **Blood Serum Cholesterol Concentration:** Table 7 show a significant effect of $p \leq 0.01$ in the concentration of cholesterol when fibrolytic enzymes are added to the concentrated of lactating ewes. In the general average and the first period of the superiority of all transactions on the treatment of control C, and the absence of significant difference during the second and third experiment periods between the

transactions As well as between the trial periods for each treatment, and the table shows a decrease in the concentration of cholesterol when the addition of fibrolytic enzymes For the center of the milk ewes in the second and third periods of the second transactions T2 and the third T3 Compared with the control treatment (computationally only) with the high concentration of the fiberolytic enzyme. At the start of the lactation stage, the release of cholesterol stimulates the storage of the body and then decreases after weeks of experimentation and depletion of the storage begins its level of decrease in serum (22). Or because of the inhibitory process of gluconeogenesis reduced fat loss and decrease, concentration of cholesterol in serum (23). It is related to body weight, metabolic rate and thyroxine rate explains the reduction in the weight of milking ewes after birth and during the trial period, especially the third treatment T3, The inclusion of exogenous fibrolytic enzymes may have an inhibitory effect on the activity of B-hydroxymethylglutraryl-CoA reduction (HMC) that is important in the manufacture of cholesterol or may be due to the effect of enzymes to reduce and inhibit the absorption of yellow acids and cholesterol in the intestines. That low concentration of cholesterol in the beginning of lactation and the beginning of the period of parturition as a result of absorption of milk-producing tissues and the late response of insulin naturally during this transition (24).

Table (6) Effect of addition of differential fibrolytic enzymes at different levels of concentrated lactating ewes on serum globulin concentration (gm./ 100 ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *5.81 ±1.89 a	A 4.29 ±1.43 a	A 7.57 ±1.88 a	A 7.90 ±1.53 a	N.S**
The Second period (15-28) days	A 2.43± 0.720 b	A 4.78±0.808 a	AB 4.95 ±0.684 a	AB 6.25 ±0.256 a	0.05
Third period (29-42) days	A 2.88±0.574 ab	A 4.74 ±1.23 ab	B 1.69 ±0.858 b	B 5.41 ±1.00 a	0.05
General Average	3.64 ±1.08 a	4.61 ±0.160 a	4.53 ±1.88 a	6.52 ±0.731 a	N.S.
Moral level	N.S.	N.S.	0.05	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error.

- **Blood serum Triglycerides concentration:** Table 8 showed significant differences ($p \leq 0.05$) between treatments when adding the fibrolytic enzymes to the concentrated diet of lactating ewes In the concentration of triglycerides in the blood serum where the second treatment of T2 and the first treatment T1 exceeded the third treatment T3 in The first period but did not differ significantly from the treatment of control C, the second period significantly ($p \leq 0.05$) significantly exceeded the second treatment T2 on the third treatment T3 No differences were found with the treatment of control C and the first treatment T1, while the general rate, the results showed significant difference $p \leq 0.01$ With the superiority of the second treatment T2 on the treatment of control C and the first treatment T1 and all significantly different from the third treatment T3. The reason for the superiority of triglycerides is the ability of the fibrolytic enzymes of microorganisms to improve the process of lipid synthesis, and this study is not consistent with (12).

Table (7) Effect of addition of differential fibrolytic enzymes at different levels of concentrated lactating ewes on concentration of serum cholesterol (mg/ ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *56.2 ±3.33 a	A 90.4 ±12.7 a	A 90.6± 9.96 a	A 90.4 ±17.3 a	N.S**
The Second period (15-28) days	A 63.6 ±6.07 a	A 90.3 ±10.9 A	A 76.6 ±6.09 a	A 77.6 ±11.9 a	N.S.
Third period (29-42) days	A 66.8 ±8.84 a	A 94.7 ±17.1 A	A 69.4 ±6.11 a	A 69.4 ±9.04 a	N.S.
General Average	62.2 ±3.11 b	91.8±1.46 a	78.8 ±6.26 a	79 .1 ± 6.11 a	0.01
Moral level	N.S.	N.S.	N.S.	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error.

Table (8) Effect of addition of differential fibrolytic enzymes at different levels concentrate of lactating ewes on the concentration of triglycerides in serum (mg/ ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *53.2 ±6.63 Ab	A 53.3 ±17.4 a	A 91.2 ±15.4 a	A 24.1± 5.95 b	0.05
The Second period (28-15) days	A 67.3 ±12.3 ab	A 64.2 ±15.9 ab	A 107.5 ±12.2 a	A 32.8 ±6.57 b	0.05
Third period (29-42) days	A 72.6 ±14.9 a	A 87.7 ±32.7 a	A 118.8± 23.2 a	A 45.2 ±16.1 a	N.S.**
General Average	64.4 ±5.78 b	68.4 ±10.1 b	105.8± 8.00 a	34.0 ±6.10 c	0.01
Moral level	N.S.	N.S.	N.S.	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error

- **Serum High Density Lipoproteins Concentration (HDL):** Table 9 shows a significant increase in $p \leq 0.05$ at the general rate of the fibroiytic enzymes to the concentrated diet of lactating ewes the first T1 treatment of high-density lipoprotein (HDL) was superior to C control. Did not differ significantly from the second treatment T2 and the third treatment T3, The first treatment for the first period was significantly ($p \leq 0.01$) on the third period but did not differ significantly from the second period, These results are consistent with (12). Table 9 shows a significant effect of $p \leq 0.05$ in the general rate of addition.

- **Serum Low Density lipoproteins (LDL) Concentration:** Table 10 shows a significant increase in p≤0.05 at the general rate of the third treatment of T3 due to the addition of fibrolytic enzymes In the concentration of low-density lipoproteins (LDLs) compared to the first treatment T1, and no significant differences were found with the treatment of control C and the second treatment T2, These results are not consistent with (12) in his study on the intestinal lambs when adding the enzymes to the analysis of the fibers to the center.

Table (9) Effect of addition of fibrolytic enzymes with different levels of concentrated diet of lactating ewes on the concentration of high-density lipoprotein HDL in serum (mg/ ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A 45.6 ±*13.7 a	A 63.2 ±0.544 a	A 56.0±6.04 a	A 60.5 ±1.37 a	N.S**
The Second period (28-15) days	A 41.2 ±8.38 a	AB 56.0 ±2.05 a	A 48.5 ±6.24 a	A 54.4 ±3.74 a	N.S.
Third period (29-42) days	A 43.4 ±9.06 a	B 48.9 ±3.48 a	A 39.5 ±4.39 a	A 48.8 ±7.39 a	N.S.
General Average	42.7 ±0.782 b	56.0±4.12 a	48.0 ±4.74 ab	54.6 ±3.39 ab	0.05
Moral level	N.S.	0.01	N.S.	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ± standard error

Table (10) Effect of addition of differential fibrolytic enzymes at different levels of concentrated lactating ewes on LDL in serum concentration (mg/ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *10.70 ±4.19 a	A 3.22 ±0.801 a	A 16.37±13.19 a	A 25.06 ±17.5 a	N.S.**
The Second period days (28-15) days	A 6.72 ±2.90 a	A 5.94 ±1.42 a	A 8.26 ±3.98 a	A 14.10 ±6.99 a	N.S.
Third period (29-42) days	A 4.35 ±1.94 a	A 8.95 ±2.76 a	A 5.80 ±1.03 a	A 11.57 ±4.81 a	N.S.
General Average	7.25 ±1.84 ab	6.05 ±1.64 b	10.13 ±3.19 ab	16.90 ±4.14 a	0.05
Moral level	N.S.	N.S.	N.S.	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error.

- **Serum Very Low Density lipoproteins Concentration (VLDL):** The results of the study showed in Table 11 that there were significant differences in the addition of fibrolytic enzymes to the center of lactating ewes in the concentration of very low density lipoproteins (VLDL) (P≤0.05) was significantly higher for the second treatment T2 for the first period and the second for the third treatment T3, Did not differ from the control coefficients C and the first treatment T1 in the first and second periods, and the second treatment was significantly higher (p≤0.01) for control treatment C and the first treatment T1 and the third treatment, The control treatment C and the first treatment T1 were significantly different from compared with the third treatment T3 (VLDL) No effect was shown on the intervals on the coefficients, which is not consistent with the study (12). High (VLDL) indicates elevated triglycerides containing cholesterol in their composition. The reason for the high secretion of aspirin is the transfer of the secretary to the hormonal changes after the birth stage, and that its rise from the indicator rates on hepatitis, obstruction of the bile and injury.

Table (11) Effect of addition of fibrolytic enzymes at different levels of concentrated lactating ewes on very low density lipoprotein (VLDL) in serum Concentration (mg/ ml)

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *12.24 ±2.50 ab	A 13.03 ±2.73 ab	A 18.25 ±3.08 a	A 1.19 ± 4.82 b	0.05
The Second period (28-15) days	A 14.80 ±1.58 ab	A 14.36 ±3.76 ab	A 20.21 ±2.47 a	A 1.54 ± 6.76 b	0.05
Third period (29-42) days	A 17.42 ±1.32 a	A 17.28 ±6.67 a	A 23.76 ±4.64 a	A 3.23 ± 9.04 a	N.S**.
General Average	14.9 ±1.42 b	14.87±1.25 b	20.74 ±1.61 a	1.21 ± 6.87 c	0.01
Moral level	N.S.	N.S.	N.S.	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error

- **Liver enzymes**

- **Aspartate aminotransferase (AST) Concentration:** From Table 12 there is a significant increase of (P≤ .05) for AST when adding the fibrolytic enzymes to the center diet In the general rate of the third treatment T3 on both the first treatment T1 and the second treatment T2 did not differ significantly from the treatment of control C, Periods in Table (25) showed the rise of AST enzyme in the first period of the second treatment T2 on the second period and the third period. Bruising And infections And the effect on the level of nutrition and its decrease in blood plasma leads to a decrease in the process of glycogenesis from non-carbohydrate sources such as protein And thus reduce the destruction of blood proteins and blood glucose and increase in value in the blood as a result of the liberation from the liver to the blood and is positively linked to the concentration of the total protein and serum in the serum, And this study did not agree with studies (12, 22, 26) who did not notice any effect of liver enzyme aspartin aminotransferase AST.

Table (12) Effect of addition of differential fibroiltic enzymes at different levels of concentrated lactating ewes on the concentration of the Aspartin aminotransferase (AST) (IU/ L) in serum

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *7.75 ± 56.3 a	A **4.37 ± 42.3 a	A 5.73 ± 65.5 a	A 12.3 ± 71.0 a	N.S.**
The Second period (28-15) days	A 6.98 ± 53.3 a	A 3.57 ± 46.9 a	B 4.33 ± 47.5 a	A 10.7 ± 68.2 a	N.S.
Third period (29-42) days	A 7.63 ± 55.0 a	A 2.96 ± 54.3 a	B 5.83 ± 39.5 a	A 10.3 ± 68.2 a	N.S.
General Average	0.399 ± 55.5 ab	3.49 ± 47.8 b	7.68 ± 50.8 b	0.933 ± 69.1 a	0.05
Moral level	N.S.	N.S.	0.01	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error.

- **Alanin aminotransferase (ALT) Concentration:** The results of Table 13 showed a significant effect of (P≤0.01) on the addition of the fibrolytic enzymes to the center of the lactating ewes at the level of the enzyme ALT in the general average with the superiority of the first treatment T1 on the second treatment T2 and the third treatment T3 did not differ significantly from the control treatment C, The effect of the periods was significant (P≤0.01) with the superiority of the first period to the first treatment for the third period but did not show any difference with the second period, the cause of hormonal changes after birth may be attributed to the use of fibrolytic enzymes for the first treatment, And that its activity is an indicator of the process of building glucose and that lactating ewes in the postpartum phase need to balance energy higher to produce milk, This increases the concentration of the enzyme ALT due to the building of glucose to optimize the utilization of coarse feed (3), his study is not consistent with studies when adding fibrolytic enzymes (11, 12) When the use of enzymes for the analysis of the fibers of the intestines, where there was no significant effects, and the increase in milk production led to increased requirements of more amino When the use of enzymes for the analysis of the fibers of the intestines, where there was no significant effects, and the increase in milk production led to increased requirements of more amino acids to produce milk, which led to the increase activity of enzymes liver (9). And that the activity of the enzyme ALT secretary be the indicator of the process of building glucose and that lactating ewes in the postpartum phase need to balance the energy to produce higher milk This increases the concentration of the enzyme ALT as a result of the construction of glucose to optimize the use of phage (3) This study is not consistent with the studies when the addition of fibrolytic enzymes (11, 12). When the use of fibrolytic enzymes for lactating ewes, where there was no significant effects, and the increase in milk production led to increased requirements of more amino acids to produce milk, which led to the increase activity of liver enzymes (9).

Table (13) Effect of addition of differential fibrolytic enzymes at different levels of concentrated lactating ewes to the concentration of Alanin aminotransferase (ALT) (IU/ L) enzyme in serum

Periods	Treatments				Moral level
	C	T1	T2	T3	
The first period (1-14) days	A *8.33 ±0.833 a	A 9.50 ±0.943 a	A 8.10 ±0.558 a	A 7.80 ±0.802 a	N.S**.
The Second period (28-15) days	A 7.76 ±0.470 a	AB 7.58 ±0.339 a	A 6.50 ±1.09 a	A 6.20 ±1.03 a	N.S.
Third period (29-42) days	A 7.70 ±0.404 a	B 6.32 ±0.697 a	A 4.77 ±1.43 a	A 4.60 ±1.44 a	N.S.
General Average	7.93 ±0.200 ab	9.20 ±0.864 a	6.45 ±0.961 bc	5.07 ±0.448 c	0.01
Moral level	N.S.	0.01	N.S.	N.S.	

C:Treatment of control without enzyme.T1:Concentration of the enzyme 1Kg/ton.T2: Concentration of the enzyme 3Kg/ton.T3: Concentration of the enzyme 5Kg/ton.
**N.S. Not significant.
*Values represent the average ±standard error.

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