



Effects of two dose of pomegranate peels powder on some physiological characteristic and libido in the Iraqi Awassi rams

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Abstract

Current research studied the effect of two different dose of pomegranate peels powder 20 mg and 40 mg / week / head / on Iraqi Awassi rams, with age 2.5 years and for the period from 29 -October - 2014 to 10-December – 2014.

Nine of Awassi rams divided randomly into three groups, as follows: control group which given tap water, second group given 20 mg/ week / head /, and the third group given 40 mg/ week / head .

Blood sample collected for measuring the concentration of hemoglobin, and calculate the total number of red blood cells RBCs, and white blood cells WBCs.

The weights of the three experimental groups measured at the start of the experiment and at the end of the experiment by scales used for large animals.

The results show a significant increase ($p < 0.05$) found in weight at the sixth week of the experiment. While there is no significant differences in the characteristics of blood, the study measured; (hemoglobin, RBCs number, WBCs number), while the libido tested at the end of the experiment. The second and third groups exceeded significantly in (responding time to the first leap, and the responding time to the first Coitus, the number of leaps and the number coitus within 20 minutes.

Key words: pomegranate peel, Iraqi Awassi rams, blood parameters, test libido.

تأثير استخدام مستويين من محلول مسحوق قشور الرمان على بعض الصفات الفسلجية
والرغبة الجنسية في الكباش العواسية العراقية

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الخلاصة:

درس البحث الحالي تأثير مستويين مختلفين من محلول قشور الرمان 20 ملغم/راس بالأسبوع و 40 ملغم/راس بالأسبوع في الكباش العواسية العراقية التي كانت بعمر 2.5 سنة ولمدة من 29 تشرين الأول \ 2014 ولغاية 10 كانون الأول \ 2014.

قسمت تسعة من الكباش العواسية الى ثلاثة مجاميع بصورة عشوائية وكالاتي: المجموعة الأولى مجموعة سيطرة وأعطيت ماء حنفية، المجموعة الثانية أعطيت 20 ملغم/اسبوع الراس، والمجموعة الثالثة أعطيت 40 ملغم/اسبوع الراس.

جمعت عينات الدم لقياس تركيز الهيموغلوبين وحساب العدد الكلي لخلايا الدم الحمر والعدد الكلي لخلايا الدم البيض.

قيس الوزن للمجاميع التجريبية الثلاث في بداية التجربة وفي نهايتها باستخدام ميزان معد للحيوانات الكبيرة. حيث وجدت زيادة معنوية في الوزن بالأسبوع السادس من التجربة بينما لم يلاحظ وجود فروقات معنوية في صفات الدم المدروسة (الهيموغلوبين، عدد كريات الدم الحمراء، كريات الدم البيضاء) بينما بين اختبار الرغبة الجنسية الذي اجري في نهاية التجربة تفوق المجموعتين الثانية والثالثة معنويًا في (زمن الاستجابة لأول وثبة، وزمن الاستجابة لأول تسفيده، عدد الوثبات وعدد التسفيدات خلال 20 دقيقة).

الكلمات المفتاحية: قشور الرمان، الكباش العواسية العراقية، صفات الدم، اختبار الرغبة الجنسية.

Introductions:

The pomegranate is tropical and subtropical fruit, which divided into three portions; seeds, which represent 3%, the juice 30%, and the remaining flash and peels represent 67% from the total weight of the fruit.(1)

Pomegranate largely consumed in the world, especially as pomegranate juice and pomegranate water industry, where it leads to the accumulation of large amounts of peels (2) This consider as a waste due to the value of these peels because they containing compound act as an antioxidant, anti-inflammatory and controlling cancer(3).

The pomegranate is a good source of Tannin, flavonoids and phenolic compounds Tannin is the main component of the peels by 25-28% (4, 5).

Al Dujaili (2) Showed that the use of pomegranate peel by 20% in fattening calves have no adversely effect on the digestive performance of the calves. and increased feed control consumption rate and thus increase body weight, and this is due to the role

of tannin as well the efficiency of production in ruminants by increasing passage of the non-ammonia nitrogen and essential amino acids from the rumen and improve soy nitrogen fermenting in the rumen (6). And it found that giving fresh pomegranate peel led to the increase in the level of α -tocopherol in the blood plasma of calves and improved feed intake and increase the final weight due to that pomegranate peel contain high antioxidants material (7).

Materials and Methods:

This experiment was conduct in the Research Faculty of Agriculture field \ animal resource department \ University of Kufa. For a period of 29 \ October \ 2014 and up to 10 \ December \ 2014.

The experiment carried out on nine of Awassi rams, with age ranging 18-24 month. weights average of the three groups 43.33 -44.00 kg respectively at the start of the experiment, these rams were divided randomly into three equal

groups by weight 3 ram \ group. the first group is considered as control which given which given tap water and the second group were given pomegranate peel powder solution by 20 g \ Ram \ week, while the third group was given 40 g \ Ram \ week.

Plant collection:

peels collected and dry at room temperature then powdered and dissolved in a half liter of water and submitted to the two treatment group the second and the third, orally by raising the ram head slightly upwards and opened his mouth using the Mouth speculum pouring material inside and wait to ensure the process of consumption is done.

The experimental rams groups put for the duration of the experiment in the half-open barn with an area of 800-m² Theater. They have been subjected to same environmental and nutritional one conditions, the feed concentration submitted by 2% of living body weight, and in a mass nutrition and in equal two meals in the morning at seven o'clock and in Evening and at four o'clock. Protein ratio was 14% in the fed, and it was composed of 35% wheat bran, 37% barley, 20% Yellow corn, 5% SBM, 2% limestone and 1% salt. Alfa Alfa hay provided ad libitum. As for drinking water and mineral salts, templates were available to the animals for the duration of the experiment.

The weights of the three experimental groups measured at the start of the experiment and at the end of the experiment by scales used for large animals.

The blood collection once every two weeks. At eight o'clock in the morning. from the jugular vein and

empties in tube containing EDTA (Tetra Acetic Acid) for measuring the concentration of hemoglobin, and calculate the total number of red blood cells RBCs, and white blood WBCs analyzed blood samples using veterinary blood analysis device of the type GENEX for the duration of the experiment.

Libido tested conducted in rams, at the end of the experiment month (December / 2014). Ewes injected with commercial Estradiol -17B (estrogen) for a period of two days with 40 mg / day, to events estrus and the next morning ewes put in a cages dimensions 5 * 5 and the ram enter on the three ewes. The following characteristics measured; (response time for the first dart, response time for the first coitus, the number of leaps, number of coitus) using a stopwatch for 20 minutes.

Statistical analysis:

Statistical analysis was performed by using Ready program SPSS (8).

Results and discussion:

1. Productive characteristic:

Rams Weights:

The table (1) show the effects of pomegranate peels powder solution on the body weight (kg) with rams, there is a significant increase ($p < 0.05$) in the sixth week in a 20 gm group compared to control. And found a significant increase ($p < 0.05$), in the weight gain of 20 gm group compared to the control group, and 40 gm. This positive result might shows that the low amounts of pomegranate peel therefore tannin, could lead to an improvement in the efficiency of the animal represented an improvement to benefit from the digestion of food because of the protective effect of the hydrolyzed protein in the rumen (9).

Table (1) the effects of pomegranate peels powder solution on the body weight (kg) with rams.

Weeks	control	20 gm	40gm
1 st	44.00 1.51±	43.66 1.96±	43.33 1.28±
2 nd	47.33 2.23± b	62.33 1.84± a	49.00 2.35± ab
Weight gain	4.33 2.40± b	17.66 2.05± a	8.66 1.96± b

- Mean± SE
- Small litter due to different between groups ($p < 0.05$)

2- Total blood characteristic

The table (2), (3), and (4) show the effects of the use of pomegranate peels powder solution on the hemoglobin concentration, red blood cells and white blood cells number. there is no significant ($p < 0.05$) differences in the concentration of hemoglobin (Hb), and the average number of red blood cells (RBCc), and the average number of white blood

cells (WBCc). for the both group of treatments compared with control and the reason of the lack of significant difference may cause by the total improvement of the animals during the experiment period with control treatment, we find that pomegranate peel powder solution did not adversely affect the standards of this blood characteristics and kept it within the normal level (10).

Table (2) the effects of pomegranate peels powder solution at the rate of hemoglobin (Hb) concentration in rams (g/dl).

Weeks	control	20 gm	40 gm
1st	11.33 0.33±	10.86 0.33±	11.80 0.62±
2nd	11.40	11.50	12.16

	0.11±	0.70±	1.33±
4th	11.43 1.13±	10.73 2.33±	11.06 0.86±
6th	8.53 0.46±	12.40 1.20±	11.60 1.00±

• Mean± SE

Table (3) the effects of the use of pomegranate peel powder solution on the average number of red blood cells (RBCc) the rams ($\times 10^{12}$ /l).

Weeks	control	20 gm	40 gm
1st	3.6 1.85±	4.9 1.48±	4.9 1.25±
2nd	4.72 0.67±	6.66 0.76±	5.13 0.63±
4th	4.79 1.53±	5.48 0.24±	4.81 0.84±
6th	3.63 0.99±	4.40 0.90±	4.18 0.09±

•Mean± SE

Table (4) the effects of pomegranate peel powder solution on the average number of white blood cells (WBCc) the rams ($\times 10^9$ /l).

Weeks	control	20 gm	40 gm
1st	7.86 6.22±	11.90 5.02±	12.00 0.96±
2nd	14.53 6.11±	20.46 0.26±	20.56 0.03±

4th	20.43 0.16±	20.60 0.17±	20.40 0.26±
6th	11.90 2.78±	10.36 3.63±	8.55 1.98±

• Mean± SE

3- Libido test

The table (5) illustrated the effects of pomegranate peel powder solution on libido test in rams that show the outweigh of the two groups second and third on control to group in the last of time to respond, to the first leap and the response time for the first coitus, As for The number of leaps and

number coitus. second group has surpassed the first group and the third group significantly increase ($p<0.05$) in the first group and this is due to the fact that the pomegranate peels increase the level testosterone hormone (11,12), pomegranate peels contain high ratio of antioxidants material in addition to phenolic materials and metals (13,14).

The table (5) illustrated the effects of pomegranate peel powder solution on libido test in rams

Groups	response time to the 1 st leap/ min	response time to the 1 st coitus/ min	Leaps number /20min	Coitus number/20 min
Control	0.38-+3.34 b	1.01-+ 4.52 b	2.82-+ 18 c	0.00-+ 1.00 b
20 gm	0.48-+2.09 a	0.98-+3.27 a	2.13-+ 24 a	0.34-+ 1.14 a
40gm	2.67+-0.39 a	1.02-+ 3.68 a	1.96-+ 21 b	0.34 -+1.11ab

•Mean± SE

•Small litter due to different between groups ($p<0.05$)

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