

MORPHO-ANATOMIAL CHANGES OF AWASSI EWES GENITALIA AT DIFFERENT PHASE OF ESTRUS

1-THE OVARY

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ABSTRACT

Total of 99 healthy genitalia of Awassi ewes were collected from Al-Shuala government and local abattoirs for biometrical measurements of ovaries,vis.;length and width of the right and left ovaries ,number of follicles(0.1mm measured and more) and their diameters and the area of the total follicles occupied (no x diameter)-number of functional corpora lutea .The results revealed that the mean length of the right and left ovaries were 1.63 and 1.58cm respectively. The highest length was recorded at estrus phase , while the shortest was recorded at metaestrus phase , but no significant difference was obtained . The mean width of the right and left ovaries were 0.90and 0,92 cm respectively , the shortest values were recorded at metaestrus ,and significant deference was only obtained in right ovary .The mean numbers of developed follicles of the right and left ovaries were 11.70and 10.95 respectively .While the lowest numbers were recorded at metaestrus phase. The mean diameters of the developing follicles of right and left ovaries were 0.74 and 0.66 respectively. The highest numbers were diestrus phase .

INTRODUCTION

Awassi ewes are fertile and mainly reared for reproduction performance and milk production (1) precise information regarding the activity of the ovaries during estrus cycle phases are useful to know the pattern of the reproductive capacity of this breed . Biometric data of Iraqi ewes breeds genitalia and conducted that the right ovary is more active than the left ovary depending on the total number of corpora lutea and follicles and the average dimensions and weight (2) .No attention has been done yet to study the functional activity of Iraqi ewes of different breeds during different phases of estrus cycle (8).Therefore this investigation was designed to elucidate the biometrical values of ovaries during different phases of estrus of Awassi ewes.

MATERIALS AND METHODS

Genitalia of 99 healthy Awassi ewes were collected from Al- shuala and local abattoirs at Baghdad province ,ewe age was determined by dentition and their age ranged between 3-6 years

The animals were checked before slaughtering for distinguish the Awassi breed by and experience man ,and the healthy genitalia were only taken .These genitalia were collected after 5-10 minutes immediately after slaughtering .These organs were left in glass containers contained normal saline 0.9%NaCl and kept in a cold box containing ice at 4C (3) .Then , the tissues around the genitalia were removed , biometrical measurements of ovaries were taken viz .; length and depth of the right and left ovaries ,number of developing follicles and their diameters and the area of the total follicle occupied (no x diameter) and also the number of functioned corpora lutea were taken . These measurements were taken by an accurate ruler and vernier (4) Estrus phases were detected by the presence of corpora lutea and vaginal smear .Data were analyzed by analysis of variance , least significant differences was used to find out the differences among different mean groups (5).

RESULTS

The mean length of the right and left ovaries were 1.63 and 1.58 cm . The right ovary was mathematically longer than the left one by 0.05 cm .However , mean lengths of both ovaries were differ with estrus cycle phase separately (Table 1). The longest length showed at estrus phase followed at diestrus phase , while the shortest length was noticed at metaestrus .The mean width of the right and left ovaries were 0.90 and 0.92cm. However, the mean width of the right ovary at metarstrus phase was significantly ($P < 0.01$) lower than the width of ovaries at other phases .The same trend was conducted in the left ovary ,but no significant difference was obtained .The mean number of follicles (0.1mm,measured and more) of the right and left ovaries were 11.71 and 10.95 respectively the right ovary showed mathematically higher value significant($P < 0.01$)and($P < 0.05$) high numbers of follicles were showed at estrus phase compared with other phases at the right and left ovaries separately and respectively .

The mean diameters of the follicles at the right and left ovaries were 0.27 and 0,24 cm and no significant differences among different phase at estrus cycle were existed .

The follicle area occupied (no x diameter)of the right and left ovaries were 3.02 and 2.49 cm .The right ovary mathematically exceeded higher value by 0.53 cm .However , the highest values were showed at estrus phase of both ovaries while the lowest values were obtained at metaestrus phase and significant differences among different phase were recorded .The mean number of functional corpora lutea of the right and left ovaries were 0.74 and 0.66 respectively ,the right ovary showed mathematically

higher value by 0.08 highly significant($P < 0.01$) differences were noticed during different phases ; diestrus phase showed higher values while the lowest values (only one ewe had corpora lutea at the right ovary) was noticed at metaestrus .

DISCUSSION

The biometrical values of both ovaries recorded in this study were in the same range of those mentioned of different breeds by(6) and (7) for Libyan ewes .In Iraq (2) reported approximately similar values using Iraqi ewes .However ,(3) reported higher values using Iraqi does .This difference could be due to species and breed of animals studied The right ovary showed higher length than the left one ,this could be due to be more active than the left ovary depending on the number of corpora lutea and follicles it has been noticed (2) showed that the length of the left ovary exceeded the right ovary .However , the biometrical values of both ovaries at metaestrus were significantly or insignificantly lower than those found in other phases separately , this difference could be due to the developing follicles and corpora lutea formation in the ovaries .Significant higher numbers of follicles of both ovaries were recorded at estrus phase , while the lowest values showed at metaestrus phase , this difference could be attributed to the hormonal effect on the development of follicles .In generally the right ovary had more numbers of follicles than the left one in all phases except at proestrus phase .

The mean diameter of the follicles obtained in the right and left ovaries were 0.27 and 0.24 mm .The mean diameter of the follicle of the left ovary was mathematically exceeded than those in the right ovary . No significant differences at different phase of estrus were obtained . It was reported similar trend but higher values in Iraqi genitalia buffalo (9) .

The area of follicles occupied the right ovary was mathematically more than that of the left one . This indicates that the right ovary is more active than the left ovary .However , estrus phase had an effect on the area occupied by follicles , estrus phase was significantly pronounced than other phase as a results of higher number of follicles in the ovaries at this phase .

A total of 137 functional corpora lutea were collected from 99 ovaries of both sides . Their distributions were 73and 64 for the right and left ovaries respectively , while the mean number was 1.38 per ewe same trend were shown by (2) .Diestrus phase showed the highest number and were significantly differs compared with other phases , while only one case in the right ovary was shown at metaestrus . This indicates that functional corpora lutea pronounced at diestrus followed at proestrus phase .This explain that the formation of corpora lutea immediately after ovulation mostly happen as a result of hormonal effect (10) .

Table (1) means of biometrical measurements of ovaries of Awassi \pm S.E

Traits	Right Ovary					Left ovary				
	Overall Mean	Proestrus	Estrus	Metaestrus	Diestrus	Overall mean	proestrus	Estrus	Metaestrus	Diestrus
No of observation	99	28	12	13	46	97	26	12	13	46
Ovary length(cm)	1.63 \pm 0.09	1.56 \pm 0.05	1.72 \pm 0.09	1.54 \pm 0.07	1.67 \pm 0.05	1.58 \pm 0.09	1.55 \pm 0.06	1.69 \pm 0.14	1.49 \pm 0.08	1.60 \pm 0.04
Ovary width(cm)	0.90 \pm 0.057	0.92A \pm 0.04	0.95A \pm 0.06	0.71B \pm 0.05	0.94A \pm 0.03	0.92 \pm 0.06	0.95 \pm 0.05	0.92 \pm 0.08	0.84 \pm 0.06	0.92 \pm 0.03
No. of follicles	11.71 \pm 2.5	12.64ABb \pm 1.37	20.25Aa \pm 5.73	7.92Bb \pm 0.69	9.98Bb \pm 0.93	10.59 \pm 2.69	13.30ab \pm 2.05	15.67a \pm 4.23	6.58b \pm 0.80	9.69ab \pm 1.13
Mean diameter of the follicle	0.27 \pm 0.03	0.26 \pm 0.01	0.27 \pm 0.03	0.29 \pm 0.04	0.28 \pm 0.01	0.24 \pm 0.03	0.25 \pm 0.02	0.29 \pm 0.04	0.26 \pm 0.01	0.23 \pm 0.01
Area occupied of follicle	3.02 \pm 0.59	3.11b \pm 0.35	4.70a \pm 1.11	2.14b \pm 0.24	2.77b \pm 0.27	2.49 \pm 0.54	3.01ABab \pm 0.41	4.03Aa \pm 0.91	1.61Bc \pm 0.27	2.02Bbc \pm 0.21
No. of corpora lutea	0.74 \pm 0.26	0.34ABa \pm 0.25	0.42ABa \pm 0.15	0.08Bb \pm 0.08	0.79Aa \pm 0.14	0.66 \pm 0.25	0.72ABab \pm 0.18	0.33ABb0.19	0.00B \pm 0.00	0.89Aa \pm 0.14

Different small letters in the same line of any ovary showed significant differences at5%

Different capital letters in the same line of any ovary showed significant differences at1%

Note significant differences between different means were done only for each ovary during different phase except mathematically between the overall mean

دراسة التغيرات الشكلية التشريحية للجهاز التناسلي للنعاج العواسي باختلاف اطوار الشبق -1- المبيض

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الخلاصة

شملت الدراسة جمع 99 جهاز تناسلي لنعاج عواسية بحالة صحية جيدة ، واخذت من مجزرة الشعلة والمجازر الاهلية الاخرى وذلك لاجراء القياسات العيانية للمبيض والتي تضمنت طول وعرض كلا من المبيضين الايمن والايسر وعرضهما ، وعدد الحويصلات (0,1 ملم فاكثر) وقطرها وتم حساب المساحة التي تحتلها هذه الحويصلات (العدد x القطر) فضلا عن عدد الاجسام الصفراء فيها باختلاف اطوار الشبق .

اظهرت النتائج ان معدل اطوال المبيضين الايمن والايسر قد بلغ 1,63 و 1,58 سم على التوالي ، حيث سجل اكثر طول خلال طور الشيع ، بينما سجل اقل طول خلال طور ما بعد الشيع ، ولكن لم يحصل على اختلافات معنوية بينهما ، اما معدل عرض المبيضين الايمن والايسر قد بلغ 0,90 و 0,92 سم على التوالي ، وقد سجل اقل عرض لهما خلال طور ما بعد الشيع ، وقد تم الحصول على اختلافات معنوية فقط في المبيض الايمن باختلاف اطوار الشبق. اما معدل عدد الحويصلات النامية لكلي من المبيضين الايمن والايسر فقد بلغ 11,70 و 10,95 على التوالي وسجل اعلى عدد معنوي خلال طور الشيع اذ بلغ عددها (25)،(20)،(15,67) لكلي من المبيضين الايمن والايسر على التوالي في حين سجل اقل عدد خلال طور ما بعد الشبق . اما معدل قطر الحويصلات النامية من كل من المبيضين الايمن والايسر فقد بلغ 0,27 و 0,24 سم في حين لم يحصل على اختلافات معنوية خلال اطوار الشبق المختلفة . اما معدل المساحة المشغولة من قبل الحويصلات في كل من المبيض الايمن والايسر فقد بلغت 3,02 و 2,49 سم على التوالي في حين بلغ معدل الاجسام الصفراء لكلا من المبيض الايمن والايسر 0,74 و 0,66 سم على التوالي ، وسجل اعلى عدد لهما خلال طور نهاية الشبق وبصورة معنوية .

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