

SEASONAL CHANGES IN THE GONADS, PRIMARY GERM CELLS AND HORMONES OF LOCAL GOATS

Ali Shehab Ahmed

Abstract

The testes and ovaries samples were harvested from local slaughtered of local black goats in Almqudadia carnage . Goats about 1-2 years estimated by data examination . The samples were 10 testes and 10 ovaries of each month, starting from 15 July 2012 to 15 July 2013. The samples were excised from bodies of slaughtered animals. The extracted samples were cleared from adjacent structures. The samples were immersed in isotonic saline solution with ice packs during transportation to the experimental lab. Morphometric, weights of testes and epididymis (head, body and tail) were done. The histological morphometric measurements of testes (diameters of seminiferous tubules, spermatogonia, intertubular spaces, sertoli and leyig cells measurements) were recorded. Morphometric and weights of ovaries were done. The numbers and diameters of mature and immature follicles and the oogonia were recorded of local black female goat. The results of this study were:

1_ Ovaries weight were significantly ($P<0.01$). higher during autumn season(3.68 ± 1.31 gm) in compared to spring season (1.67 ± 0.05 gm) . Ovary height were significantly ($P<0.01$). higher during autumn season(10.29 ± 3.11 mm) in comparing to other season and Ovarie length were significantly ($P<0.01$). higher during autumn season(19.31 ± 0.41 mm) in compared to other season and Ovarie width were significantly ($P<0.01$). higher during autumn season(14.86 ± 0.33 mm) in compared to other season(winter, spring, and summer) (13.69 ± 0.28 , 12.97 ± 0.4 , 12.73 ± 0.27 mm, respectively) .

2_The numbers of mature follicles significantly ($P<0.01$) were high in autumn season (31.2 ± 1.11) in comparing to winter, spring, and summer season and The numbers of immature follicles significantly ($P<0.01$)were higher in autumn season (71.49 ± 1.23) in comparing to winter, spring, and summer season. while the percentage was $40.93\pm 1.43\%$ in comparison to values of other seasons .

3_Testis weight were significantly ($P<0.01$) higher during autumn season(155.94 ± 1.21 gm)in comparing to other seasons. Testis size were significantly ($P<0.01$). higher during autumn season(138.13 ± 1.32 cm³) in compared to other season . Testis length were significantly ($P<0.01$). higher during autumn season(10.62 ± 0.19 cm) in compared to other season(winter, spring, and summer) (8.16 ± 0.25 , 9.04 ± 0.27 , 7.49 ± 0.17 cm respectively) . Testis width were significantly ($P<0.01$). higher during autumn season(7.27 ± 0.11 cm) in comparing to other seasons.

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4_The weight of epididymis (head, body, tail) for local blacks bucks were (18.43 ± 0.23 gm) during autumn season in comparison to other season(winter, spring, and summer) (12.13 ± 0.28 , 11.49 ± 0.31 , 12.33 ± 0.27 gm) with statistically significant ($P < 0.01$).

5_ The diameter of seminiferous Tubule and thickness of germinal epithelium were significantly ($P < 0.05$) higher during autumn(60.52 ± 0.76 and 268.13 ± 0.39 um) in comparison to other season season. The intertubular spaces significantly ($P < 0.01$) were least in autumn season (4.43 ± 0.33 um) in comparing to winter, spring, and summer seasons.

6_The numbers of sertoli and leydig cells significantly ($P < 0.05$) were high in autumn season(353.45 ± 5.44 and 402.88 ± 5.22) in comparing to winter, spring, and summer season and The numbers of spermatogonia cells significantly ($P < 0.01$) were higher in autumn season 283.60 ± 6.51 in comparing to winter, spring, and summer season. The widest the volume diameter of seminiferous tubules was 282325.88 ± 12.88 um in comparing to other seasons.

7_There was a decrease in number Oogonia in the ovaries for the female goat at spring season 133.62 ± 4.85 in comparison to winter, summer and autumn season which recorded 186.66 ± 3.10 , 173.32 ± 5.53 , 289.20 ± 4.15 and respectively with statistically significant ($P < 0.01$). The diameter of ovum was during autumn season were (185.83 um) statistically significant ($P < 0.01$) in comparison to less values in spring and summer seasons which recorded 72.58 and 79.00 respectively. The diameter of mature follicles revealed high values during autumn season were (4.22 ± 4.53 um) statistically significant ($P < 0.01$) in comparison to less values in spring ,and winter seasons which recorded 1.01 , 2.01 and 3.91 , respectively.

8_ Testosterone hormone concentration were significantly ($P < 0.05$). higher during autumn season(4.37 ng/ml) in compared to spring season (1.83 ng/ml) . FSH hormone concentration were significantly ($P < 0.05$). higher during autumn season (3.67 ± 0.11 ng/ml) in comparing to other seasons. Furthermore, estrogen hormone and LH hormone was elevated at autumn season 9.20 ± 2.14 and 5.11 ± 0.31 which was statistically significant ($P < 0.05$) in comparison to less values in other seasons.

9_Diameter of nucleus

higher during autumn .cells in follicle were significantly ($P < 0.05$) season(0.3 ± 2.6 um) in compared to spring season (1.83 um) The Diameter of mitochondria significantly ($P < 0.01$) were higher in autumn season (0.09 ± 0.2 um) in comparing to spring and summer season The numbers of mitochondria significantly ($P < 0.05$) were (4 ± 71) in comparing to other season and The numbers of vacuoles significantly ($P < 0.01$) were higher in autumn(3 ± 46) season in comparing to other season

10_Diameter of nucleus cells in sertoli were significantly ($P < 0.05$) higher during autumn season(0.6 ± 2.5 um) in compared to spring season (0.4 ± 1.2 um) The

Diameter of mitochondria significantly ($P < 0.01$) were higher in autumn season ($0.04 \pm 0.40 \text{ um}$) in comparing to spring and summer. The numbers of mitochondria significantly ($P < 0.05$) were (12 ± 96) in comparing to other season and The season numbers of vacuoles significantly ($P < 0.01$) were higher in autumn (11 ± 105) in comparing to other season.