

Development of Female Reproductive Organs of Ducks

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FIVE FEMALE Pekin ducks at hatch and at 1, 2, 3, 4, 5, 6, 9 and 12 months of age and 5 females of each of Rouen and Sudani 12 months of age were slaughtered to study the different characters of the reproductive organs. The absolute weight of gonads increased steadily until 6 months of age. At this age sexual maturity was attained as mature ready to rupture follicles were observed in the ovary accompanied by rapid increase in the reproductive organs. The Rouen showed the largest gonads and the Sudani had the smallest.

Almost no studies were done on the reproductive organs of female ducks. However, developmental changes in the ovary and oviduct of chickens were extensively studied.

Material and Methods

Five female Pekin ducks at hatch and at 1, 2, 3, 4, 5, 6, 9 and 12 months of age were available. Also, 5 females of Rouen and Sudani (Native ducks) ducks of 12 months of age were available. The birds were slaughtered and their reproductive organs were freed from the adjacent tissues and weighed. Oocyte numbers were counted.

Results and Discussion

The absolute weight of reproductive organs increase steadily until 5 months of age (Table 1). At this time sexual maturity, seems to be attained as an uprise in weight, is observed and mature ready to rupture follicles were observed (Plate 1). Afterwards, no remarkable changes occurred. Although the organs reached the maximum size on the ninth month of age they were again depressed on the subsequent ages, which may be due to the annual sexual rest or the reduction in body weight. This may be due to the breeding season which is still observed in ducks as semi-domesticated birds. Reproductive organs percentages followed almost the same trend of absolute weights and the differences were significant.

Breed differences were also observed in female reproductive organs, either in absolute or relative weights (Table 2). The Sudani and Rouen ducks were of larger organs than the Pekin.

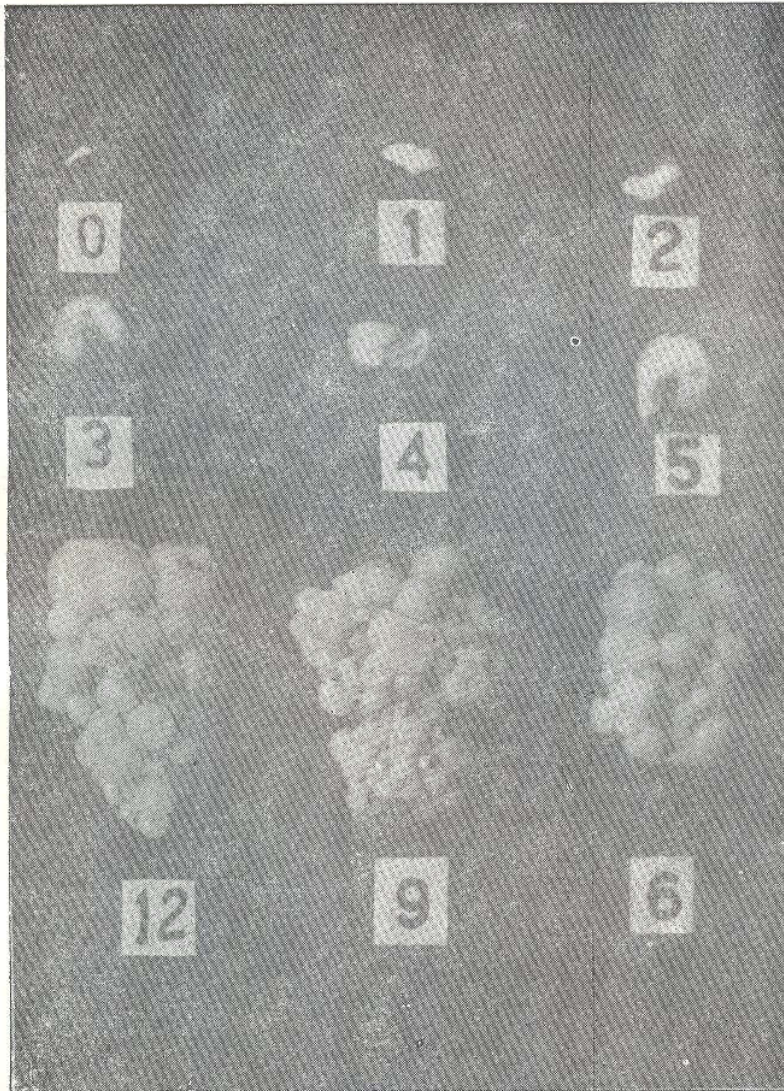


Plate 1. The ovary at different ages in Fekin ducks (Age in months).

TABLE 1. Average absolute and relative weights of female reproductive organs at different ages

Items	At hatch	Age in months								Total average
		1	2	3	4	5	6	9	12	
Ovary Wt.	0.003	0.066	0.074	0.164	0.226	0.270	1.700	16.640	8.220	3.040
Rel. Wt.*	0.0078	0.0213	0.0159	0.0145	0.0144	0.0149	0.0813	0.7740	0.4246	0.1521
Oviduct Wt. . . .	0.020	0.082	0.110	0.185	0.220	0.332	7.370	21.470	13.940	5.810
Rel. Wt.**	0.0251	0.0265	0.0237	0.0164	0.0140	0.0184	0.3525	0.9986	0.7200	0.2439
Total Wt. . . .	0.023	0.148	0.184	0.349	0.446	0.602	9.070	38.110	22.160	7.899
Rel. Wt. . .	0.599	0.0478	0.0396	0.0309	0.0284	0.0333	0.4338	1.7726	1.1446	0.3990

F value : * Between ages = 2.63* (Significant)

*** Between age = 2.97* (Significant)

Oocytes

Only the visible oocytes were recorded. The oocytes of the Pekin ovaries were recorded for the last three ages (6, 9 and 12 months) according to their different sizes. In general, the total number of oocytes increased from the sixth to the 12th month of age, and this can be also observed in the different oocyte sizes (Table 3). It seems that these ducks had attained sexual maturity just before the age of six months at which the test was done. This caused no rapid increase in oocytes number as all the increase observed was gradual. The greatest number of visible oocytes were less than one ml in diameter followed by the oocytes that ranged in diameter between one ml to one cm. The number of oocytes that exceed one centimeter in diameter was the lowest and appeared on the ninth month of age. Theoretically, the reduction in the number of mature oocytes is expected due to increased laying eggs. But it seems that the development of new oocytes from the microscopic sizes exceed the number of ruptured follicles.

TABLE 2. Average absolute and relative weights of reproductive organs in different breeds of ducks.

Items	Pekin		Rouen		Sudani	
	Wt.	Rel. Wt.	Wt.	Rel. Wt.	Wt.	Rel. Wt.
Ovary	8.22	0.4246	26.87	2.1258	35.36	2.1733
Oviduct	13.94	0.7200	20.71	1.6384	32.20	1.9791
Total	22.16	1.1446	47.58	3.7642	67.56	4.1524

Table 3. Age and breed differences in the number of oocytes in the ovary.

Breed	Age in months	1 m	1 mm. to 1 cm	1 cm	Ruptured	Total
Pekin	6	180	35	—	1	216
	9	220	84	1	6	311
	12	321	98	2	10	431
Rouen	12	380	130	10	14	544
Sudani	12	220	80	8	11	319

The total number of visible oocytes was higher in Rouen, being lighter, than in the Pekin and Sudani being heavier. The visible oocytes of heavier chickens are lower in number than those of light ones (Romanoff, 1931). Also, the breeds used for egg production possess more visible oocytes than meat breeds (Hafez, 1955). The Rouen and Pekin ducks produce almost the same number of eggs (Kamar, 1962). Therefore, there was a small difference between these two breeds in the number of oocytes, and both, had more oocytes than the Sudani producing the least number of eggs. The total number of visible oocytes in adult ducks observed in this study (being all of meat types) was lower than the number of oocytes of meat and laying breeds of chickens (Hafez and Kamar, 1955).

References

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نمو الجهاز التناسلي الأنثوي في البط

جمال قمر و كمال يمى

كلية الزراعة ، جامعة القاهرة

ذبحت خمس ذكور وخمسة اناث من البط اليكين في عمر الفقس ، شهر ٤ ، شهرين ، ثلاثة ، اربعة ، خمسة ، ستة ، تسعة ، اثنى عشر شهرا كما ذبحت خمسة اناث وخمسة ذكور من كل من البط الروان والسودانى في عمر ١٢ شهرا ، ايضا ، لدراسة الصفات المختلفة للجهاز التناسلى .

وقد زاد الوزن المطلق للغدد التناسلية تدريجيا حتى الشهر السادس من العمر حيث تبلغ الاناث جنسيا حيث لوحظ وجود البويضات التى على وشك الانفجار من كيسها بالبييض مصحوبة بالزيادة السريعة في وزن اجزاء الجهاز التناسلى وقد كانت اناث البط الروان اعلى وزنا في جهازها التناسلى بينما كانت اناث البط السودانى اقلها وزنا .

وغالبا لم تجر دراسات على اجزاء الجهاز التناسلى لاناث البط بينما توجد دراسات مكثفة على ذلك بالنسبة للدجاج .