

**STUDIES ON ABNORMAL REPRODUCTIVE BEHAVIOURS
IN BALADI PIGEONS KEPT UNDER INTENSIVE
SYSTEM OF BREEDING**

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INTRODUCTION

Intensive method of animal production demands a great control over the farm animals and their environment. Housing requirements serve two major functions for the breeder. First, permit the organization and concentration of the flock into a manageable unit and, secondly provide a physical environment that is conducive to optimal production. The flocks which are kept under defective housing requirements "suffering" and this will badly affect productivity in the form of behavioural disorders and sub-optimal performance (Fraser; 1988).

The aim of the present work is to study the abnormal behaviour of pigeon which may arise due to defective stocking density.

MATERIAL AND METHODS

Stock and husbandry:

- (1) Five flocks (A,B,C,D and E) of Baladi pigeons were used for the present work. Each flock was kept separately in a closed pigeon loft made of bricks, wood and wire.

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(2) Water and feed were offered daily *ad libitum*.

(3) The flocks were arranged as follows:

Pigeon flock	No. of flock (No. of pairs)	floor area of loft	floor allowance No. of pairs/m ²	volume allowance of pair
A	500	50 m ²	10	0.250 m ³
B	400		8	0.375 m ³
C	250		5	0.500 m ³
D	200		4	0.750 m ³
E	150		3	1 m ³

Observation and Technique:

* 50 pairs from each flock were chosen to study the following points:

- . Building of nest-site.
- . The time of egg laying after mating.
- . Effect of different densities on brooding time and ♀ / ♂ brooding ratio.

* The following abnormal behaviours were recorded for each flock:

- (1) Male Jealousy
- (2) Nest desertion and
- (3) pseudo-female and male "Soliciting".

The pigeons were monitored from the first day of incubation until the behaviour was terminated (hatched successfully) (Silver; 1977).

Day one on incubation was defined as the first day on which an egg was present in the nest at the first morning observation. The hatching day was defined as the hatching of the 2nd egg. Brooding time was recorded 3 times throughout the incubation at 1st, 10th and 15th day (Skutch, 1957).

RESULTS AND DISCUSSION

It was observed that both male and female were built their nest. The male selected the nest site, then both

Table (1): Effect of flock size and space allowance on reproductive behaviour of pigeons

Flock	No. of pairs	Female, male Brooding ratio	Kite jealousy	Nest desertion (Female)	Pseudofemale & male soliciting
A	500	3.5:1	10 %	20 %	20 %
B	400	3.5:1	9 %	15 %	10 %
C	250	2.8:1	3 %	1 %	2 %
D	200	2.8:1	-	-	-
E	150	2.8:1	-	-	-

sharing in nest building provided the material for nesting, crouching in the nest and uttering a distinctive Coo, 80 % of the birds started to lay the first egg after they had mated by 9 days, with a range of 7 - 14 days. Craig (1911), Ryves (1944) and Van Tyne and Berger (1971) list 7 categories to which species may be assigned according to the role of the sexes in building the nest and grouped pigeons under "both sexes build the nest". These results were similar to those of Eisner (1960) who reported that Ring dove (*Streptopelia risoria*) parents select the nest-site, crouching in the nest and uttering a distinctive voice.

The result & behavioural disorders were mentioned and discussed in the following:

♀ / ♂ brooding ratio:

As shown in Table (1) the parents exchanged during egg-brooding like a constant table time in the frequency of broodness. The female being the largest brooder. The ratio in the flock of high density was differ from flocks of adequate density, the ratio in the former was 3.5:1 (flocks A and B) but in the latter was 2.8:1 (flock C, D and E). This may be attribute to that, males take a large part toward territory in those flocks of high density (Fabricius *et al.* 1963) as the number of intruding males may be high ratio. Also, it was observed that 40 % of the observed males brooded the eggs during night hours, while 60 % of them brooded during day light (as mentioned by Skutch; 1957 who reported that males of species that related to pigeons were taken one long session each day covering the eggs and the female covering the eggs by night).

Male Jealousy

The incidence of this anomale was cleared by the increasing of the size of flock and reduction of space allowance. The incidence was ranged between 3 % to 10 % in

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flocks of low space allowance. As shown in Table, (1) flock A (500 pairs), flock B (400 pairs) and flock C (250 pairs) showed 10 %, 9 % and 3% of that vice respectively. While in other flocks of adequate space allowance there was no incidence of male Jealousy. This result indicated that the appearance of male Jealousy probably related to low space allowance available to birds. (McBride and Craig, 1985 claimed that, agonistic interactions in confined live-sock were aggravated with low space allowance).

Normally the female pigeon of a pair can escape from the constant attention of the male for a few minutes. The male will scalp the female by pecking at its head to draw its attention, but this instinct may change to a vice leading to the death of the female due to lesions could be happened by male or departure of female away the nest and refusing egg setting (Smith, 1977). It was observed that the male constantly peck the female hardly at the head during eating, drinking anywhere.

Nest desertion:

Nest desertion was studied by Armstrong and Robertson (1988) on blue-winged teal, they found that the nest desertion was occurred when the eggs were lost from the nest and also current clutch size strongly influence nest desertion in blue-winged teal.

From Table (1), it is clearly shown that 20 % and 15 % of ♀ in flock A and B deserted the nest respectively, while 1 % of ♀ in flock C (250 pairs). On the other side there was no any nest desertion in flock D and E (D: 200 pairs and E: 150 pairs). It could be concluded that females in the flock of high density and low space allowance can easily desert their nests as the result of increasing the ratio of the meddled males in the flock that interrupt the close affiliation of male and female coupling and consequently affect

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successful production (Gowaty et al., 1983 and 1989, found that parentage was controlled with the association of male and female eastern blue birds, *Sialia sialis*).

Pseudo-female and male "soliciting":

The incidence of this anomaly in flock A, B and C was 20 %, 10 % and 2 % respectively. On the other hand flocks of suitable floor allowance (Flock D and E) did not show such anomaly.

This phenomena appeared during the precopulatory bouts. It was characterized by thwarting of a strong tendency of female to behave sexually as male (mounting the female). Dilger (1960), considered this phenomenon in *Roseicollis* ordinarily sandwiched between intense displacement scratchings and/or tail-waggings. And may be explained by that, motor patterns associated with sexual behaviour in vertebrates. From the aforementioned results one may conclude that, flock size and space allowance are influencing the appearance of reproductive disorders as the increase the size and decrease space allowance, the high the incidence of reproductive disorders in pigeons breed under closed system.

SUMMARY

Female and male brooding ratio, male Jealousy, nest desertion and pseudo-female & male soliciting were studied in Baladi pigeon flocks kept under closed system. The results indicated that stocking defects will badly affect productivity of the flock in the form of behavioural disorders appearance.

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