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BREEDING BIOLOGY OF DOMESTICATED EURASIAN COLLARED DOVE (COLUMBIDAE) *STREPTOPELIA DECAOCTO* FRIVALDSZKY 1838 IN SAIDPUR, BANGLADESH

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Abstract

Two pairs of domesticated Eurasian Collared Dove *Streptopelia decaocto* reared at eighteen months for its breeding performance in intensive system. One pair was homozygous albino $al//al$ x $al//al$ and another pair was one wild type $+//al$ and another albino $al//al$. Another experimented four pairs of doves were produced from these two pairs. Out of six pairs total 114 squabs were produced during the research period. Total three albino pairs produced 100% albino squab and different coloured male and female produced different colours which were 50% each. Sex ratio of male and female were observed 1:1. Experimental doves were reared in cages measures 23x20x16 and 25x22x18 inches and feed were supplied all day long with wheat, corn, mustard, broken rice and burnt soil. Intake feed were 15 gram per dove in a day. During the time of this observation only hypervitaminosis and worm infestations were observed and the mortality rate was few. Only in one pair (rosy ♂ x wild type ♀) produced 11 male (46%) and 13 female (54%) out of 24 squabs; this was slightly exceptional. In total 114 squabs from six pairs only one rosy male and pied rosy female were found. Breeding record of this research suggests that the colour patterns are first wild type then rosy and finally albino gradually.

Key words: Barbary Dove, breeding, productivity, management

Introduction

Although the ringneck dove is normally assigned its own systematic name, as *Streptopelia risoria*, considerable doubt exists as to its appropriate classification. However because of the wide use of both the common and systematic names, it is best to consider it separately from either of the putative parent species. Some sources confidently assert that it is a domestic form of the Eurasian Collared Dove, *S. decaocto*, but the majority of evidence points to it being a domesticated form of the African Collared Dove, *S. roseogrisea*. Ringneck doves have been domesticated for 2000 to 3000 years. They are easily kept, and long-lived, in captivity, living for up to 12 years, and are noted for their gentle nature. There is a small feral population in Los Angeles, California, where neither *S. decaocto* nor *S. roseogrisea* is currently found.

Ringneck doves released to the wild cannot readily survive, as they are not equipped to live wild in most climates, have no natural fear of predators, and have never learned to distinguish natural foods. White or albino ringnecks are most commonly used in stage magic acts. The species of ringneck doves found in huge in Asia and Africa. Derek Goodwin describes the following varieties- *Streptopelia roseogrisea*, *S. bomuensis* and *S. arabica*. Dr Mathew Vriends in 1994 used *Streptopelia roseogrisea* variety *risoria* and Dr Danny Brown used directly *Streptopelia risoria* for its scientific name. Gibbs, Barnes and Cox reported the African Collared Dove has an overall length 260-270 mm and weight 150-160 grams in 2001; Brown report this is about 300-310 mm and weight 150-200 grams. Barbary Dove (Michael, 1989) is larger than African Collared Dove (Derek, 1967). Coloration is creamy buff shading to near white on this chin, belly and under tail coverts. It has no homing ability and dies after release in any parties in any adverse conditions of the environment; it has severely restricted vision in bright light and flight is almost impossible.

Ringneck doves are more affectionate than cat and cheaper than a dog. In cages during 18 years rearing it raised 221 squabs. The Eurasian Collared Dove (*Streptopelia decaocto*) most often simply called the Collared Dove, species of native to Asia and Europe, and also recently introduced in North America. It is a medium sized dove, distinctly smaller than the Wood Pigeon, similar in length to a Rock Pigeon but slimmer and longer-tailed, and slightly larger than the related Turtle Dove, It is grey-buff to pinkish-grey overall, a little darker above than below, with a blue-grey underwing patch. The tail feathers are grey-buff above, and dark grey tipped white below; the outer tail feathers also tipped whitish above. It has a black half-collar edged with white on its nape from which it gets its name. The short legs are red and the bill is black. The iris is red, but from a distance the eyes appear to be black, as the pupil is relatively large and only a narrow rim of reddish-brown iris can be seen around the black pupil. The Collared Dove is not migratory, but is strongly dispersive. There are two subspecies, *Streptopelia decaocto decaocto* in most of the range and *Streptopelia decaocto xanthocyclus* in the southeast of the range from Burma east to southern China. The latter differs in having yellow skin around the eye. Two other subspecies *Streptopelia decaocto stoliczkae* from Turkestan in central Asia, and *Streptopelia decaocto intercedens* from southern India and Sri Lanka, are now considered synonyms of *S. d. decaocto*. Eurasian collared doves are originated from the Indian Sub-

continent. Although only introduced in the late 1970's, this bird is now common in Florida. First found in Kern County in 2001, the success of this bird in other regions leads to the conclusion that unless removed it will be equally successful here. In wild this is monogamous and 3-6 broods per year 1-2 smooth, glossy and oval 31mm long and white eggs. Incubation is 14-18 days by both parents. Lifespan is up to 20 years in captivity. Diet mostly seeds, some greens, some soft fruit, garbage. Young fed crop milk. Feeds on ground but will take berries from bushes. Doves are unique from other birds as they drink by sucking, so they don't have to tilt their heads back to swallow. In wild there are total eight types of collared doves which are Eurasian Collared Dove- *Streptopelia decaocto*, African Collared Dove/Barbary Dove/Ring Turtle Dove- *S. roseogrisea*, Island Collared Dove- *S. bitorquata*, Philippine Collared Dove- *S. dusumien*, Ring-necked Dove- *S. capicola*, Mourning Collared Dove- *S. decaocto*, Half-collared Dove/Red-eyed Collared Dove- *S. semitorquata* and White-winged Collared Dove- *S. reichenowi*.

Materials and Methods

Collected doves: 2 pairs of doves were collected from a pet shop in Saidpur, Bangladesh. One pair was wild type and another albino. During rearing one from albino pair died then paired with wild type. After 18 months rearing total six pairs of adults (Plate 2, 3, 5 and 6) were maintained and 114 squabs (Plate 7) were produced and sold in reliable sources.

Intensive care in cages: Two types of cages with 23x20x16 and 25x22x18 inches were used for this dove rearing and breeding (Plate 1). Though the cages were not sufficient for its fly but breeding were normal. No diseases were found except hypervitaminosis and worm infestations. Diseases occurred in albinos 63.3% and in wild type this is 77.7% (Saggese et al., 2008).

Feeding: Feed was supplied all day long with wheat, corn, mustard, broken rice and burnt soil. Intake feed were 15 gram per dove in a day. During the time of squab producing average 30 gram excess feed were needed. Standard foods are millet, canary seed, hemp seed, milo and wheat (William, 1987). Ringneck doves are hardy bird and disease resistant if kept inside. American Dove Association recommends spray millet, corn bread, wheat bread, sweet potato, boiled egg with shell, cottage cheese, carrots and chopped greens. Need to ensure the mixture of 80% calcium starter grit and 20% granulated red fortified salt of livestock should maintained (Danny, 1995). High protein feed is more important for squab.

Breeding plan: For observing the breeding performance (as shown in Table 1) of Barbary Dove Albino ♂ x Albino ♀ of three pairs, Wild type ♂ x Albino ♀ 1 pair, Rosy ♂ x Wild type ♀ 1 pair and Rosy ♂ x Albino ♀ 1 pair were maintained (Plate 3, 5, 6 and 8). Barbary doves' eggs are white and elliptical as pigeons (Plate 4). Dove fanciers have bred them in a great variety of colours; the number of colours available has increased dramatically in the latter half of the twentieth century.



Plate 1 Dove Cages



Plate 2 Wild Type Dove



Plate 3 Albino Type



Plate 4 Albino's Egg



Plate 5 Rosy x albino



Plate 6 Rosy x wild type with



Plate 7 Two squabs



Plate 8 Rosy pied female

Table 1. Showing the breeding performance of collared dove

Sl.	Breeding pair	Squab	Squab sexing	♂%	♀ %	Colour %
1	Albino♂ x Albino ♀	28	14♂, 14♀	50	50	100 Albino
2	Albino♂ x Albino ♀	24	12♂, 12♀	50	50	100 Albino
3	Albino♂ x Albino ♀	12	6♂, 6♀	50	50	100 Albino
4	Rosy ♂ x Albino ♀	14	7♂, 7♀	50	50	50 Rosy 50 Albino
5	Rosy ♂ x Wild type ♀	24	11♂, 13♀	46	54	46 Rosy 54 Wild type
6	Wild type ♂x Albino ♀	12	6♂, 6♀	50	50	50 Wild type 50 Albino

Total squab 114; ratio of male and female is 56♂: 58♀ = 1:1.04

Genetic causes for the albino form of S. risoria

The wild color in the collared dove is gray from the mixture in various amounts. Dove and pigeon albinos might be a result of adrenaline pathway. Albino is a common autosomal recessive in inheritance. Research suggested that out of 1,905 squabs there were 153 albinos. If doves are albino carriers with wild type some albinos will come. On the average, 1/4 of the offspring would be albino.

Results and Discussion

According to Dr Wilmer J Miller who is renowned dove expert of Iowa state mentioned that this domestic variety is kept for perhaps thousands to years. These birds have been breed in cages in biblical times. Genetic research on this has been started since 1800's. Now it shows 40 colour variations; 38 color patterns are presented by Professor Bob Lockhart's published in 1999 (Bob, 1999). During rearing of this dove the room temperature must be maintained at 95⁰-97⁰ F for its food metabolism (Danny, 1995). After 30 days squabs need to remove from parents to avoid being attacked. There is a black, white edged collar on the back of the neck; albino form comes around perhaps thousand years which is colour mutation. Albino form was first imported from Japan in 1967. For its proper productivity or breeding 18 inches cube cage is okay but 24 inches cube if good for one pair breeding (Pair 1, 2 and 3).

Pair 1. Heterozygous wild type with Homozygous albino

+w x ww

Gamete: + w w w

F₁: +w +w ww ww

 50% wild 50% albino

Note: + = wild type, w = white or albino

Pair 2. Heterozygous rosy with Homozygous rosy

+ry x ryry

Gamete: + ry ry ry

F₁: +ry +ry ryry ryry

 50% wild 50% rosy

Note: + = wild type, ry = rosy

Pair 3. Heterozygous rosy with Homozygous albino

ryw x ww

Gamete: ry w w w

F₁: ryw ryw ww ww

 50% rosy 50% albino

Note: ry = rosy, w = white or albino

Conclusion

In Bangladesh this collared dove culture is a new one in poultry sector. Some peoples who are not getting suitable job they are culturing this dove in aviary or cage system as hobby and then earned money which alleviate the poverty from this society. Moreover, it fulfilled our

mental demand time consuming job for older people. Biological approaches of this dove are really interesting for its genetic studies. If people use scientific technique they will of course gain a lot of profit from this.

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