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Short Communication

Breeding Biology of Domestic Pigeons (*Columba livia domestica*) in Village Bharokey (Sialkot), Pakistan

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Abstract. The breeding biology of three pairs of domestic pigeon breeds was the main focus of the present study. This study used a pigeon-keeping house in the village of Bharokey (Sialkot) Pakistan as its model. There were a total of six eggs found in the three nests that were examined throughout this investigation. With a focus on breeding pairs, egg laying, egg features and calculations and fledglings, various facets of the breeding biology of domestic pigeon breeds were examined.

Keywords: breeding biology, breeding pairs, egg laying, hatching and fledglings

The process of rearing animals for human consumption is known as domestication. Pigeons are among the first domesticated birds and animals (Hansell, 1998). In Pakistan and around the world, domestication of pigeons is extremely popular. Domestic pigeons, commonly referred to as feral pigeons, originate from rock pigeons (*Columba livia*). Feral pigeons are prevalent in nearly all human-inhabited areas and are among the most productive feral animals globally (Gilbert, 2014). Domestic pigeons are now frequently maintained and bred for racing, fighting and exhibition purposes.

Domestic pigeon (*Columbia livia domestica*) belongs to the order columbiformes and the family columbidae. The family Columbidae contains 308 species (Clements, 2007).

In order to explain ecological, evolutionary and behavioral patterns among species, it is crucial to understand the biology of bird reproduction (Stutchbury and Morton, 2008). The key aspect of animal life is the process of passing through the offspring to future generations (Perrins, 1983). Reproductive success is crucial for a species' survival and stability (Pimm *et al*., 1995). Studies on bird breeding also yield useful data for management and conservation (Duca *et al*., 2009).

In Pakistan and other areas of the world domestic pigeon breeding has long been a popular hobby and it remains so today. Breeding seasons of domestic pigeons vary depending on where they live around the world. The majority of columbids often have a long breeding season or reproduce all year round (Baptista *et al.*, 1997; Snow and Snow, 1964; Murton, 1958; Neff, 1947). Feral Pigeon reproduces in all months of the year, even in winter (Johnston and Janiga, 1995), while some species reproduce year-round, the majority of nesting attempts occur within a few months. (Baptista *et al*., 1997). The breeding season has its peak in the spring and summer and declines in the autumn and winter (Johnston and Janiga, 1995). Throughout the year, pigeons reproduce frequently but in the winter, very few pairs breed (Hetmañski, 2004).

Study area. This study was carried out at a specific location of a pigeon keeper house located in the village of Bharokey in Sialkot district, Punjab province of Pakistan. The study focused on the breeding biology of particular pairs of domestic pigeon breeds.

Breeding pairs. Three breeding pairs of domestic pigeons from the model region were used for the breeding process. Every breeding pair differs from the others due to unique characteristics.

First breeding pair. Golden pigeon breed, a female pigeon and Lal-motiyonwaley pigeon breed, a male pigeon, were the first breeding couple (Fig. 1).

Second breeding pair. The female and male pigeons in the second breeding pair were both members of the Chattwaley pigeon breed.

Third breeding pair. At last, the third breeding pair included a male Batera pigeon and a female 35-waley

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pigeon (Fig. 3). These pigeon breeds are all prominent domestic breeds with a strong presence in the model community.

Egg-laying. ***Egg laying by the first breeding pair.*** Breeding biology was observed from March to May (2023). On March 25, the first breeding pair deposited two eggs, which hatched on April 16. The eggs are white in colour. Fig. 4 shows the eggs and fledglings.

***Egg laying by the second breeding pair*.** The second breeding pair deposited eggs on April 17 and the eggs hatched on May 6.

This pair lay two eggs, and both hatched. Their eggs are white in hue. Fig. 5 shows eggs and fledglings.

Egg Laying by the Third Breeding Pair. The third breeding pair deposited eggs on April 13, which hatched on April 29. They each lay two eggs, and both hatched. This breed's eggs are white in colour. Fig. 6 displays eggs and fledglings.

Egg traits and clutch size. Six eggs were collected, with egg lengths ranging from 50 mm to 53 mm and widths ranging from 41 mm to 46 mm (Table 2). All three breeding pairs employed in the study had a clutch of two (Table 2) Table 1 shows the information about parentage.

Three nests from three domestic pigeon breeding pairs were employed in the current investigation. Table 1 includes information on all three breeding pairs, the number of eggs they laid and the number of eggs that hatch. All of these nests came from the same location a home used for pigeon housing. Table 2 compares the lenght, width and colour of eggs from the three breeding pairs.

This research work focused on the breeding biology of domestic pigeon breeds. Differentstudies on breeding biology were conducted in different regions all over



Fig. 1. Showing the 1st breeding pair.



Fig. 2. Showing the 2nd breeding pair.



Fig. 3. Showing the 3rd breeding pair.



Fig. 4. Showing the 1st breed eggs and fledglings.

Table 1. Displaying the number of eggs laid and hatched by each of the three distinct breeding partners that were chosen

Breeding pigeon pairs	Male pigeon	Female pigeon	No. of eggs laid	No. of eggs hatched
Breeding pair no.1	Lal-motiyonwaley pigeon breed	Golden pigeon breed	2 Eggs	Both eggs were hatched
Breeding pair no.2	Chattwaley pigeon breed	Chattwaley pigeon breed	2 Eggs	Both eggs were hatched
Breeding pair no.3	Batera pigeon breed	35waley pigeon breed	2 Eggs	Both eggs were hatched

Table 2. Compare the length width, colour of eggs from the three breeding pairs

Different breeding pairs of domestic pigeons	Egg no.	Egg length	Egg width	Egg colour
Breeding pair 1	Egg no. 1	51 mm	45 mm	White
Breeding pair 1	Egg no. 2	50 mm	43 mm	White
Breeding pair 2	Egg no. 1	53 mm	46 mm	White
Breeding pair 2	Egg no. 2	52 mm	46 mm	White
Breeding pair 3	Egg no. 1	51 mm	41 mm	White
Breeding pair 3	Egg no. 2	52 mm	42 mm	White

the world (Shallu, 2020; Marini *et al*., 2010; Jacquin *et al*., 2010; Konyukhov, 2000; Elliott and Cooper, 1980).



Fig. 5. Showing the 2nd breed eggs and fledglings.



Fig. 6. Showing the 3rd breed eggs and fledglings.

In this research, a study of breeding biology was observed from March to May (2023). A previous study says spring and summer are the most active periods of the breeding season (Johnston and Janiga, 1995).

In the current study, different parameters have been studied related to eggs. All eggs that were laid by the breeding pairs used in this study are white in colour, in agreement with the previous study (Shallu, 2020). Typically, columbid eggs are completely white, as described by another previous study (Skutch, 1991 and Goodwin, 1983).

A bird's total egg production for each attempt at nesting is called a clutch. The current study found all breeding pairs have a clutch size of two. Studies reveal doves and pigeons consistently deposit one or two eggs (Baptista *et al*., 1997 and Goodwin 1983).

Both the hatching and fledgling successes were achieved properly for all the breeding pairs. As stated in the report (Hetmañski and Barkowska, 2007) hatching success and fledgling success significantly attempt a role according to the nesting conditions of a pair's territory. This study is about breeding biology, in which various traits and characteristics of eggs were observed, *i.e*., breeding pairs, egg laying, hatching, fledglings, etc.

Conflict of Interest. The authors declare that they have no conflict of interest.

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