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## Comprehensive review on pigeon farming: A sustainable livelihood option for rural communities in Assam

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### Abstract

Pigeons, belonging to the Columbidae family, are land birds that have been a multicultural presence in households since ancient times. Traditionally associated with beautification and messenger roles, pigeons are now gaining commercial importance in farming. Recognized for their early maturity, short incubation period, delicious meat, good market prices, and low input costs, pigeon farming is becoming popular among farmers. Unemployed youth and homemakers can engage in pigeon farming for additional income. The introduction of high-quality meat-purpose pigeon breeds can be advantageous for farmers adopting commercial pigeon farming.

**Keywords:** Pigeon, breed, lifecycle, breeding, feeding, management

### Introduction

Pigeons are very popular domestic birds, considered the symbol of peace. Pigeon keeping is a prehistoric interest of humans. From ancient times, we know that the Asian subcontinent was the pioneer of fancy pigeon rearing. Pigeons readily acclimatize themselves to living under a variety of conditions. Pigeons are ubiquitous birds and can be found in virtually every town and city around the globe. Pigeons live side by side with humans as a source of food, hobby, and experimental purposes (Sari *et al.*, 2008) [13].

Pigeons belong to the Columbidae family, which is characterized by stout bodies, short necks, small heads, and thick, heavy plumage (Gifford, 1941) [8]. Although pigeons are one of the most intelligent of all bird species, humans have found limited uses for the birds other than for the purposes of sport, food, and as message carriers. Besides its recreational qualities, if we look into its meat qualities, we will find that pigeon meat is much palatable, delicious, and easily digestible animal protein, and used as a source of bio-fertilizer, especially for family gardening (Rani and Sheeba, 2022) [3, 4].

In India, most people rear pigeons for their natural beauty. The most common type of pigeon found in India is the Rock pigeon. Pigeon rearing is very popular among the rural people of Assam; most of them rear pigeons for meat purposes and sometimes for religious purposes. Pigeon farming is a very interesting, profitable enterprise, and one can make a good source of income. Nowadays, people have started realizing its importance, and it is becoming more popular day by day. Employed youth can think of establishing a pigeon farm as a source of income generation and employment.

Despite the rich potential of pigeon farming in Assam, it is noteworthy that there is currently no proven technology specifically available to the region. While traditional pigeon farming practices exist, a comprehensive review of available literature becomes imperative to formulate an informed approach. The unique agro-climatic conditions of Assam demand a deep understanding of pigeon farming methods that align with the state's ecological systems.

Drawing upon existing knowledge and adapting it to the local context can serve as a foundation for establishing a sustainable and region-specific pigeon farming system. By synthesizing insights from diverse sources, including global pigeon farming practices and regional agricultural expertise, Assam can potentially use the benefits of integrated farming systems. This innovative adaptation ensures that the agricultural practices align with the state's unique characteristics, promising a resilient and successful venture in pigeon farming for Assam.

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## Lifecycle

Pigeons are generally raised in pair (one male and one female), stays together for their whole life. Life span of one pair of pigeon is about 12 to 15 years. At around 5-6 months of age, female pigeon start laying eggs and they become active breeder upto the age of about 5 years. Incubation period of Pigeon egg is about 17 to 18 days. The production of squabs (young one of pigeon) was ranging from 12-18 pair per year (Hoque *et al.*, 2021) [2]. The stomach of baby pigeon contains crop milk, which they eat for 4 days. Female pigeon feed their baby for ten days by their lips. After that, they start taking supplementary food by their own. At their age of 26 days, they become adult.

## Pigeon Breeds

With more than three hundred pigeon breeds globally, enthusiasts and breeders alike engage in the art of rearing pigeons for various purposes. This review aims to shed light on the classification and characteristics of pigeon breeds, focusing on two main categories: Meat Productive Breeds and Entertaining Breeds.

### Meat Productive Breeds

**White King:** Renowned for its meat productivity, the White King pigeon breed stands out for its qualities that make it an excellent choice for meat production.

**Texona:** Another notable meat productive breed, the Texona, contributes to the diversity of pigeons reared for its meat.

**Silver King:** Recognized for its distinctive characteristics, the Silver King is a valuable addition to the list of pigeons bred for meat.

**Gola and Lokha:** These breeds further exemplify the diversity within the Meat Productive category, each contributing unique traits to the world of pigeon breeding (Arockia and Indianraj, 2023) [1].

### Entertaining Breeds

**Moyurponkhi:** Known for its captivating appearance, the Moyurponkhi belongs to the category of Entertaining Breeds, appealing to enthusiasts for its aesthetic qualities.

**Shirazi:** The Shirazi pigeon, with its unique features, adds to the allure of pigeon breeding for entertainment purposes.

**Lohore:** Hailing from a rich history, the Lohore breed is a testament to the diversity of pigeons bred for their entertaining qualities.

Further, Fantail, Jacobin, Frillback, Modena, Trumpeter, Trubit, Mukhi, Giribaz, Templar, Lota etc may be used for rearing. These breeds encompass a wide array of captivating features, making them popular choices among pigeon enthusiasts who appreciate the entertaining aspects of pigeon breeding (Arockia and Indianraj, 2023) [1].

## Housing

Housing is very important factor for pigeon farming. According to Castoro *et al.*, 2008 [5] Pigeons are quite territorial about their housing or nesting area. Pigeons were reared in semi-intensive system and the construction materials used for pigeon house were packing boxes, wood and bamboo (Hoque *et al.*, 2021) [2]. Houses for pigeons are generally

referred to as lofts. There are certain criteria to keep in mind before making pigeons house. Construction of Pigeon farm should be at higher place to get rid from dog, cat, mouse and some other harmful predators. There should be enough flow of air and light inside the house. Entrance of the Pigeon shed should be constructed such a way that it should prevent the entry of rain water directly inside the house (Arockia and Indianraj, 2023) [1]. The best direction to keep lofts is in between northwest to north east. Waterproofing loft is a priority, because wet floors endanger the health (Kabir, 2013) [11]. Wooden multiple tier type is mostly used by pigeon farmer as it is cheaper and most durable. The second most used lofts are Metal mesh multiple tier type. (Rani and Sheeba, 2022) [3,4]

## Feeding

Pigeons generally eat wheat, maize, paddy, rice, enamel, legume, mustard, gram etc. Supplementation of balanced feed is required for better growing, good health and for proper production. According to different experts Protein content of Pigeon feed should be around 15-16 %. Every pigeon consumes 35-50 grams of grainy feed daily. Baby pigeons (squab) don't need extra feed for 27 days. They take crop milk from their parent which is known as pigeon milk. According to Bharathi *et al.* (1997) [16], pigeon crop milk includes a significant number of immunoglobulins and physiologically active enzymes. Male and female pigeon feed their baby in this way for 10 days. After that, they become able to fly and feed themselves by their own. For fast growing of baby pigeon and for nutrition of adult, feed them oyster shell, lime stone, bone powder, salt and greet mixture, mineral mixture etc. with their regular feed (Arockia and Indianraj, 2023) [1]. Balance ration is one of the fundamental requirements to successful pigeon farming.

## Breeding management

The three basic purpose of pigeon breeding, on the basis of 'production of utility' are meat type pigeons, sports pigeons and ornamental pigeons (Fekete *et al.* 1999) [7]. September and January is the best month for the pigeons breeding. Breeding then slows towards the February (March output is low) and in June/July when the days are short and cold (July/August output is low). A degree of infertility occurs during the months of February, June and early July. Infertility problems do occur in fantail, pouter and Jacobin. From August to November molting occurs. By trimming 2-3 tail feathers from the both sides of male and female and some feathers around the vent could be a good result for fertilizing the eggs.

## Health Management

The common diseases of the farm were New Castle disease, Pigeon Pox, Coryza and Parasitic infestation. Hofstad (1978) [9] stated that New Castle disease is most prevalent viral disease. Several health problems but parasite infections play a major role. They constitute a major source of infection and transmission of diseases (Marques *et al.*, 2007) [12]. Pigeons affected with ecto-parasites such as lice, mites and endo-parasities like *Ascaridia* (round worm), *Capillaria* (crop worm and hair worms), *Syngamus tracheae* (grape worms) Schock and Cooper (1978) [14]. The effects of parasitism on birds lead to retarded growth, low egg production and susceptibility to other infections (Dranzoa *et al.*, 1999) [6]. On the other hand, regular cleaning and proper management

practices of the pigeon lofts will be needed for the better production and control measures of the prevalence of pigeon diseases in the lofts.

### Importance of Pigeon in Integrated Farming System (IFS)

Pigeon farming, a traditional practice, presents a unique avenue for integrated farming systems, fostering sustainable agricultural ecosystems. These birds, admired for their adaptability and minimal space requirements, effortlessly integrate into diversified farming setups. Employing them in conjunction with crops and livestock maximizes resource utilization. Pigeons contribute to nutrient recycling through their droppings, enhancing soil fertility. Their foraging habits also aid pest control, reducing the need for chemical interventions.

In an integrated farming system, pigeons coexist harmoniously with other elements, such as poultry and crops, creating a symbiotic relationship. Pigeons' scavenging behavior complements the dietary needs of other livestock, promoting a balanced nutrient cycle. Furthermore, their swift reproduction allows for a steady supply of protein-rich meat. This holistic approach to farming not only ensures sustainable production but also minimizes environmental impact, making pigeon farming an integral component of forward-thinking, ecologically conscious agricultural practices.

### Conclusion

Pigeon is another poultry species reared by farmers in rural areas for production of high value delicacy meat from the swabs. Pigeon farming in Assam may turn into a profitable business. Many villages household of Assam is engaged in Pigeon rearing but they don't have proper knowledge about its economic importance. Hence, pigeon rearing can be considered as backyard poultry farming by the rural people. By improving feeding, breeding system management and other environmental support the production level can be improved more. In near future, pigeon and quail meat to contribute towards the increase in gross domestic product (GDP) through livestock sector and can substitute chicken meat. However, there is need for development of concrete package of practices for pigeon farming suitable to the farmers of Assam as well as for the country.

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