

## Pigeon Rearing-The Neglected Sector of Poultry Farming

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### Introduction

Almost all household in NE region of India, raise some pigeon in their home. Pigeon is a very familiar stout-bodied domestic bird with short necks and short slender bills with a fleshy beak. It is considered as the symbol of peace. They live in nests and the nests are made of sticks. Both the sexes incubate their eggs in their nest. They produce crop milk, which is secreted by a sloughing of fluid-filled cells from the lining of the crop.

Pigeon rearing requires low labor and investment and also can be raised in leisure time. The meat of baby pigeon (squab) is very tasty, nutritious and restorative. On the other hand, pigeon rearing can be a great source of some extra income for farmers. Scientific method of squab rising is very profitable than traditional way.

Squab rising can be made profitable source of income with good management and market squabs require little land since all breeders are kept in small pens and houses. Recent survey conducted indicates that there is a fair demand of squabs in large cities like Delhi, Mumbai, Kolkata, Hyderabad, Chennai and Bangalore. Squab rising also has tremendous export potential to Dubai, Australia Thailand and Singapore. A pigeon is a tradition part of Middle Eastern diet. In China Pigeon meat is a popular restaurant dishes and there is good demand from Jewish community clubs all over the world.

The squabs are harvested just before full feather development and before the youngster have developed and started to fly, usually 21-30 days of age. Squab production is different from other poultry operations in that the squabs have to be bred and fed by their parents until the market age of 4 weeks. A pair of Pigeon may raise 15 young ones in a year. Squab weight up to 3 weeks of age was

subjected to environmental influences, particularly due to their dependence on crop milk and the mothering instinct of the females. Only after 3 weeks of age genotype of squab also becomes an important factor in the body weight gains.

### History of Pigeon Rearing

People have bred the common pigeon, *Columba livia*, for almost four thousand years. Those, who loved and cared for these birds, have ranged from emperors to peasants, from old to young, have been members of all races, creeds and types, and have provided this bird with accommodations ranging from palatial to just a few simple holes in their roof.

Pigeons and doves belong to a large and successful family of 289 species, ranging in size from the Diamond Dove which is approximately 12cm long, to the Crowned Pigeon which is as big as a female turkey, and in colour from the many-colored Fruit Dove to the soft grey Wood pigeon. Our familiar feral pigeon of the streets has been known by man for 6000 years. They were sculpted on Egyptian tombs, carried messages for King Solomon, helped Julius Caesar conquer Gaul and won many medals for bravery in both world wars. Several poets including Shakespeare have written about the qualities of pigeons. They are truly amazing birds.

### Benefits of Pigeon Rearing

1. Pigeon becomes domestic very easily
2. They are very prolific. From their Six month of age, they produce two baby pigeon per month on an average.
3. Pigeon can be raised easily in the home yard and roof of the house.
4. It takes only 18 days to come out the baby pigeon from the egg, i.e. incubation period is only 18 days.

5. Baby pigeon become suitable for table purpose within 3-4 weeks.
6. Pigeon house can be built in a small place with very little investment.
7. Feeding cost is very low, most of the cases they feed by themselves.
8. Pigeon meat is very tasty, nutritious and has a great demand in market.
9. By investing small capital and labour we can get profit from them.
10. Diseases are comparatively low in pigeon.
11. The squab has a great demand in the market as the patient's diet.
12. Pigeon start laying egg at the age of 5-6 month of age.
13. Pigeon rearing can be a great source of subsidiary income of the landless poor.
14. They reproduce throughout the year, even during winter, and can raise four or five broods annually.
15. The female usually lays two white eggs and both the sexes incubate their eggs in their nest.
16. Pigeon feathers are very important ingredient for toy making industry.

#### Facts About Pigeon

Adult Bird weight	640-850gm
Floor space required/bird	0.4sqm
Age for Marketing	25-30days
Production of Squabs by a pair of breeder Pigeons	12
Average weight of Squab	450-700gm
Age of sexual maturity	170-180 days
Female productive life	10 years
Male productive life	5 years
Incubation period	18 days
Dressing percentage	74 %

#### Different Breeds of Pigeon

Pigeon farming in the Indian Sub continent was introduced during the period of Mughal King. Over the centuries various breeds/varieties have been developed using indigenous and imported germplasms but very little documentation is there about these breeds/varieties. Most of these belong to fancy and flier category.

#### 1. Fancy/ Show Purpose Breeds/ Strains: -

1. Kheri 2. Nisvari 3. Kabli 4. Hydrabadi 5. Patiala 6. Saharanpur 7. Asceel 8. Lakka 9. Giribaz 10 Zeera 11. Lotan 12Mainajog 13. Chandan Chuha 14. Kattupura 15. Ujale 16. Kali Soraji 17. Lal Soraji 18. Neela 19. Surakha 20. Moyurponkhi 21. Shirazi 22. Fantail 23. Frillback 24. Trumpeter 25. Mukhi

#### 2. Meat Varieties for Squab Production:

1. King 2. Carneau 3. Swiss Mondaine 4. French Mondain 5. Homer 6. Naqabposh 7. Gola 8. Umer 9. Lahore 10. Indian Mondaine 11. Taxona 12. Lokha

#### Life Cycle

Generally, pigeons are raised in pair. One pair of male and female pigeon stays together for their whole life. They can survive for 12-15 years. Male and female both collect straw together and build a small nest for them to live. Female pigeon starts laying egg at the age of 5-6 month. They lay two eggs every time and their breeding power stays for 5 years. Both male and female incubate the egg. It takes 17-18 days to come out the baby pigeon from the egg. The stomach of the 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 foods by their own. At the age of 26 days, they become adult and suitable for table purpose.

#### Breeding of Pigeon

For profitable pigeon production, the most important is good breeding stock. Pigeon breeds at 5-8 months of age laying two eggs each nesting, both the parents incubate the eggs till they hatch in 16-18 days. Good breeding stock usually will produce for 3 to 4 years. For a profitable flock of squab producers, culling is essential.

Selection of pigeon can be done on the basis of good laying capacity, which produced good squab weight, livability and market quality. The first cross of two breeds selected and the breed for squab production usually produces a very good market squab. Sexual maturity is attained at about 6 to 7 months of age when the pigeons begin to mate. Breeding season is usually long and may continue all the year round. In the prime life (3-6 years) pigeons produce about 5-8 squabs per year. Breeders need to be replaced after 4-5 years.

**a. Selection of Breeders:**

It is difficult to determine the sex of the pigeon by casual observation. Good pigeons for breeders have a white or pinkish white skin and light-colored legs.

**b. Breeding Facilities:**

The quarters of the pigeon house must be dry, well ventilated, and provided with plenty of day light. A loft 7 feet wide and 10 to 12 feet long will provide ample room for 15 pairs of birds that is about 15 sq ft/pair. Breeder houses should be equipped with nests, bowls, feed hoppers, bathing pans, and a rack for nesting material.

**c. Care of Breeders:**

Pigeons are ready to mate at about 4 to 5 months of age. They mate in pairs and usually remain with their mates throughout life, although the mating may be changed if desired by placing the male and female in a coop together and leaving them there for 6 to 14 days or until such time as they become settled. No more than 10 to 15 pairs of mated birds should be kept in one loft.

**Housing Of Pigeon:**

Pigeon houses are called as lofts. A Pigeon house should be planned to keep the pigeon comfortable. Plenty of ventilation is desirable and the house should face in such a direction, which will provide fresh air, sunlight. The shed roof house is one of the simplest and cheapest types to build small houses are usually built about 6 feet high in the rear, 7 to 8 feet in the front and 9-12 feet deep. An 18–24-inch projection or hood may be built on the front of the house for protection against storms.

9×12 feet pen can accommodate 25-30 pairs on commercial squab farms from 10 to 20 pens are usually kept in one long house 3 to 4 square feet of floor space is usually allowed for each pen of pigeon, most pigeon rears prefer wooden floors in pigeon houses. Pigeon houses should be so constructed that they can easily be kept free from rats and cats.

**1. Important Points to Be Considered in Housing of Pigeons**

2. Appropriate stocking density.
3. Cage should provide healthy environment.
4. Protect from extreme weather & predators.
5. Sufficient number of feeders and waters and sufficient nesting sites.
6. Roosting sites are to be provided.

7. Some bathing sites or sprinklers must also be provided. But the pipes may be coated with zinc to prevent rusting. Birds may eat the flakes of zinc and get poisoned, so, it is important to wash them periodically with vinegar.
8. The house should be constructed at high place. This will keep them free from dogs, cats, mouse and other harmful predators
9. Every pigeon needs 30cm long, 30 cm high and 30 cm wide space.
10. A door should be kept for every room of 10 cmx10 cm size.
11. Keep water and sand near the house, as they clean their body with sand and water.

**Feeding And Nutrition of Pigeon**

Pigeons have been raised for centuries on husbandry system that allow free-ranging flights for obtaining food. They may often range over many square kilometers to locate seeds and edible scraps. Crops act as an efficient storage organ for storage of food and their food intake is always higher than allowed by their rate of digestion. Pigeons are efficient grazers and arboreal feeders; they obtain their food partly on trees (from buds and flowers) and also on pasture (weed, seeds, insects etc.). Its ability to suck water is remarkable, taking 5-10 seconds to suck 15 ml of water. A squab requires around 3 kg of compounded feed to reach the marketable weight of around 400 to 500 gm. Pigeons are raised primarily for sport and hobby-being used widely in racing a, shows, and training to perform tricks. Many people especially in North Eastern region of India, in contrary maintain pigeon for table purpose also.

Squabs are marketable as early as 28 days of age, at which time their dressed weight is about 450 gm at this age, squabs are tender and soft meated due to the fat under skin. Pigeons grow more rapidly than most of the birds during the first 20 days of life. They receive their first nourishment from “Pigeon Milk” regurgitated from their parent pigeon’s crop. Pigeon milk is a thick, creamy, semi-digested substance high in protein and fat, but low in carbohydrates. When 20 to 40 days of age, squabs may be fed a pigeon feed. Unlike other form of poultry, pigeon will not eat mesh, so pigeon feed either consists of whole or cracked grains or economically prepared pellets.

**Most Pigeon producer's feed**

- (1) A complete pelleted ration, or
- (2) A complete pelleted feed plus whole or cracked grain.

The most common pelleted grains are corn, wheat, sorghum, and peas. Grains can be offered in an open trough or cafeteria style where the self feeder has individual compartments for each type of grain. If an open trough is used, it is recommended that pigeons be fed twice daily. Only enough feed should be offered to each feeding period as will be eaten in 1 hour.

Pigeons generally eat wheat, maize, paddy, rice, legume, mustard, gram etc. Keep food in front of their house and they will take it by themselves. They should serve balanced food for proper growing, healthy and for proper production. They can be served balanced food prepared for chicken. Pigeon food should contain 15-16 % protein. Every pigeon consumes 35-50 grams of grainy food daily. For fast growing of baby pigeon and for nutrition of adult, feed them oyster dust, lime stone, bone dust, salt, greet mixture, mineral mixture etc. with their regular food. Along with this, feed them some green vegetables daily. A chart of balanced food for pigeon mentioned bellow.

Feed Ingredients	Amount (kg)
Broken Wheat	2.8 kg
Broken Maize	2.2 kg
Mustard	1.0 kg
Broken Gram	1.0 kg
Soyabean Cake	0.8 kg
Rice Dust	1.8 kg
Salt	0.4 kg
Total	10 kg

**Feeding nestlings**

Pigeon's milk begins to be produced a couple of days before the eggs are due to hatch. The parents may cease to eat at this point in order to be able to provide the squabs with milk uncontaminated by seeds, which the very young squabs would be unable to digest. The baby squabs are fed on pure crop milk for the first week or so of life. After this the parents begin to introduce a proportion of adult food, softened by spending time in the moist conditions of the adult crop, into the mix fed to the squabs, until by the end of the second week they are being fed entirely on softened adult food.

Pigeons normally lay two eggs. If one egg fails to hatch, the surviving squab gets the advantage of a supply of crop milk sufficient for two squabs, and by the end of the first week it is almost as big as two "normal" squabs would be.

**Crop Milk**

Crop milk is a secretion from the lining of the crop of parent birds that is regurgitated to young birds. They are found among all pigeon and dove where they are referred to as pigeon milk.

**1. Comparison of crop milk to mammalian milk**

Crop milk bears little resemblance to mammalian milk, being a semi-solid substance somewhat like pale yellow cottage cheese. It is extremely high in protein and fat and contains more of it than cow or human milk. It has also been shown to contain anti-oxidants and immune-enhancing factors both male and female adult birds produce crop milk and share in the feeding and care of the young.

**Specialty of Squab Meat**

1. The flesh of squab contains a larger proportion of soluble protein and small proportion of connective tissue than the adult pigeon flesh.
2. It is good source of liquid protoplasm and of riboflavin and is relatively rich in Phosphorus.
3. Squab meat has a fine texture and distinct delicious flavors and is tender and is easily digested.
4. Widely recommended by physicians for invalids and convalescents.
5. Excellent demand for squabs in large cities and poultry diversified meat is from the month of October to February.
6. Attractive and extra-large squabs slightly fetch higher prices and small and dark-skinned squabs bring lower prices and extra-large.

**Sexing of Pigeon:**

It is difficult to distinguish sexes until the birds are several months old. The females are usually somewhat smaller and more refined than the males especially in the head and neck, has tendency to waddle. The male is more aggressive, struts about

with a louder cooling and often drags his tail on the ground.

### Egg Production:

Generally male and female pigeon stay in pairs. During laying period, they collect straw and make a small nest. Female pigeon starts laying eggs when they reach 5-6 month of age. They lay a pair of egg after every one month. The pigeon hen lays an egg, generally skips a day and then lays again both male and female pigeon incubate the egg in turn. It takes about 17-18 days to come out the baby from the egg. As the eggs are very small in size, so baby production is very profitable.

Some information regarding egg production is depicted below:

- Incubation period is 18 days
- Eggs per year: 12-15 number
- Fertility percentage: 90%
- Hatchability of fertile eggs: 85%
- Age of sexual maturity: 6 months
- Average egg weight: 17 gms

### Incubation of the Egg:

The male generally sits on the egg during the middle of the day, and the female the remainder of the time. The incubation period is about 17 to 18 days.

### Brooding and Rearing: -

Both the parents care for the young. They feed them regurgitating a thick, creamy mixture called as the pigeon milk into the open mouth of the young. Pigeons are the most rapid growing of all poultry. Squabs exceed the normal adult weight at the time they are ready to leave the nest-at about 30 days of age.

### Health and Disease of Pigeon

Diseases in pigeon are comparatively lower than other poultry birds. They suffer by TB, paratyphoid, cholera, pox, Newcastle etc. Besides this they also suffer by various louse and malnutritious diseases. to get rid of the disease in pigeon one should advised to: -

- Follow the advice of trained veterinarian.
- Keep the pigeon house clean and germ free.
- Separate the disease affected bird from healthy birds.
- Vaccinate them timely.
- Keep them free from worms.

- Feed them balanced food to prevent malnutritious diseases.
- Use medicine for removing louse from their body.

### Recognizing a sick bird

A sick pigeon will fluff out its feathers as if it is cold, but in winter a healthy bird will not allow you close enough to pick it up. Instinctively, the patient hides, and is seen on the ground at dusk when its fellows have flown up high to roost. The droppings may appear green and watery, and signs of bullying by other birds may be visible around the head. Sometimes, when a pigeon is very ill, it has little chance of survival.

Sl No	Signs of good health	Signs of disease
1	Normal appearance of the dropping in terms of quality as well as quantity	Discharge from nostrils, eyes or beak
2	Normal amount of feed and water consumed	Excess loss of feathers or misshapen or ruffled feathers
3	Normal behavior	Soiled vents.
4	Normal posture	Dull or closed eyes
5	Normal growth and body weight	Lameness, wound or swollen feet.
6	Normal rate and depth of respiration	Over grown beak and nails.
7	Healthy feather	Stains or scabs on un-feathered parts.

### Management of the Diseased Bird:

1. Separate the sick bird.
2. Discourage pecking of the bird by removing it from the flock; this will prevent the spread of infection from the flock.
3. Treat the diseased cases separately.
4. Give euthanasia if treatment fails. This will help in reducing the spread of infection in the flock and will in turn help in reducing the mortality.
5. Before introducing the new bird in the flock, the bird must be kept separately for a period of 30 days as a mark of quarantine measure.

### Diseases of Pigeon:

#### 1. Paratyphoid (Salmonellosis):

Caused by *Salmonella typhimurium* var. *copenhegen* and a wide variety of

*S.typhimurium*. Transmitted through contact or through eggs. Recovered bird remain as carrier. There is rapid weight loss, loose greenish dropping, swelling of leg joint, leg and wing paralysis and twisted neck syndrome. The medicine of choice is for treating paratyphoid is Enrofloxacin 10% oral solution.

## 2. Collibacillosis (E. coli.):

Caused by gram -ve bacteria E.coli. Most often the young bird die in the nest, adult bird become listless and lose weight, dropping become loose, mucous and greenish-yellow in appearance and there may be foul odour. Some bird may have nasal discharge and respiratory problems as well. It may be diagnosed by culture of the organism from samples of liver, vent, lungs and gut. The bird may be treated with Neomycin sulphate and Doxycycline powder (Combination) dissolved in water for 5 days

## 3. Mycoplasmosis: -

Caused by the bacteria *Mycoplasma columborale*, *M columbianum*, *M columbinasale* and *M gallinerum*. Transmission is through faeces, infected feed and drinking water. Infected bird can remain as carrier. Mycoplasmosis is characterized by phlegm in the mouth, nasal discharge, difficulty in breathing, watery eyes and sometimes cough. There is swelling in the infected beak and throat cavity, with an unhealthy smell. Nostrills become grey, as the air passages become congested, breathing become labored, The bird sits with an open beak and makes wheezing sound, especially in evening and at night. A combination of full dose of Tetracycline plus a full dose of Tylosin in drinking water is an excellent treatment.

## 4. Haemophilus disease: -

Caused by bacteria *Haemophilus gallinerum*, the bird suffers from severe conjunctivitis, which affects both eyes. The eyelids are markedly swollen and there is purulent discharge. Affected bird shows respiratory distress. The disease spreads by direct contact and droplet infection from one bird to another. Diagnosis is based on the clinical signs and laboratory culture from eye and nasal discharge, Tetracycline can be prescribed once the disease has been confirmed.

## 5. Streptococcosis (Swelling of toe joints): -

Swelling of middle toe joint is very common in pigeon. This condition is caused by

*Streptococcus fecails* and *Streptococcus gallinerum*. Ampicillin/Tetracycline is the drug of choice for the disease. 25 mg Tetracycline/Ampicillin tablet/powder for 5 days

## Amazing Facts About Pigeon:

1. Pigeons have been around for a long time – long before humans. Pigeons have long been kept and raised in captivity. The common pigeon was imported by early settlers as food animals and to serve as carriers of messages. They were originally called "rock doves" and are closely related to doves.
2. Pigeons are gregarious and tend to be found in small flocks of around twenty to thirty birds. Seeds and grains make up the bulk of their diet, but they are willing to sample just about anything.
3. A pigeon nest is usually constructed with small twigs and located on covered. The male brings the nesting material to his mate, one piece at a time and she builds the nest, usually well-hidden and hard to find.
4. Pigeons reproduce throughout the year, even during winter, and can raise four or five broods annually. The female usually lays two white eggs. Both parents take turns keeping the eggs warm. Males usually stay on the nest during the day; females at night. Incubation takes about 16 to 19 days and the young are fed crop milk for about the first two weeks. (Crop milk is a specially produced secretion that both parents produce from the lining of the crop, a sac-like food storage chamber that projects outward from the bottom of the esophagus). Eventually seeds replace the crop milk.
5. There are as many as 28 pigeon color types. Pigeons have colorful, iridescent neck feathers which are called a "hackle." Adult males and females look alike, but a male's hackle is more iridescent than a female's. Pigeons that are all white are usually albinos. These white "doves" are frequently released during ceremonies to symbolize love and peace.
6. Pigeons have many types of feathers, some of which are accompanied by one or two filoplume feathers that look like hairs. These

filoplumes may have sensory functions, such as detecting touch and pressure changes.

7. Adults have orange or reddish orange eyes. Juveniles that are less than six to eight months old have medium brown or grayish brown eyes. Pigeon eyesight is excellent. Like humans, pigeons can see color, but they also can see ultraviolet light – part of the light spectrum that humans can't see. Pigeons are sometimes used in human search-and-rescue missions because of their exceptional vision.
8. Pigeons can hear sounds at much lower frequencies than humans can, such as wind blowing across buildings and mountains, distant thunderstorms and even far-away volcanoes. Sensitive hearing may explain why pigeons sometimes fly away for no apparent reason.
9. Pigeons have a unique drinking behavior. Most birds take a sip of water and throw back their heads to let the water trickle down their throats. But pigeons suck up water, using their beaks like straws.
10. Pigeons can fly up to 40 or 75 miles per hour and may fly as far as 600 miles a day. They seem to be able to detect the Earth's magnetic fields. This magnetic sensitivity, along with the ability to tell direction by sun, seems to help pigeons find their way home.
11. Although pigeons are considered by many to be dirty and disease-ridden, there is little evidence linking pigeons directly to infections in humans.

### Problems and Solutions

12. To some, pigeons are a visual and aesthetic problem. To others, they are only a problem when present in great numbers or when roosting on buildings or under bridges. Their droppings can disfigure buildings if left to accumulate due, probably to their acidic nature. However, pigeons do little if any actual structural damage to buildings.
13. Pigeons prefer to perch on flat surfaces which they need to nest. Nests are usually built under shelter. Wood or metal sheathing can be installed on a ledge at an angle that denies pigeons the opportunity to use that

surface. An angle of at least 45 degrees is needed, and 60 degrees is required to ensure that even the most determined attempt to land will be useless. There are a number of bird management systems such as bird wires and bird coils that are commercially available.

14. Homemade or commercial scarecrows are often used to attempt to frighten pigeons. The types that move are more successful but pigeons quickly accommodate to any type of scarecrow used against them.