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Quail Production and Management: An Overview

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Introduction

Quail, a small avian species belonging to the pheasant family, was first domesticated in Japan in 1595. In India, there are two species of quail: the Black Breasted Quail (*Coturnix coromandelica*), found in the wild and the Brown-colored Japanese Quail (*Coturnix coturnix japonica*), which is bred for meat and commercial production. The Japanese Quail is the largest among quail species, though still smaller than a pigeon. Quail are fast-growing birds with a short generation gap. They were introduced to India in 1974 from California. A broiler quail can be sold at just 5 weeks of age. They begin laying eggs at 6 weeks old and continue until they are around 24 weeks old. Quail meat is considered a delicacy and various recipes can be made from it, including pickled meat and tandoori quail. Quail eggs can be eaten boiled or made into egg pickles. Compared to chickens, quail require smaller housing. Commercially, quail chicks are often kept in multitier cages, which increases labor efficiency and makes better use of land space. The Japanese Quail (*Coturnix japonica*) has gained significant popularity in recent years, leading to the establishment of many quail farms across the country for both egg and meat production. This rise in popularity is driven by increasing consumer awareness and demand for quality meat.

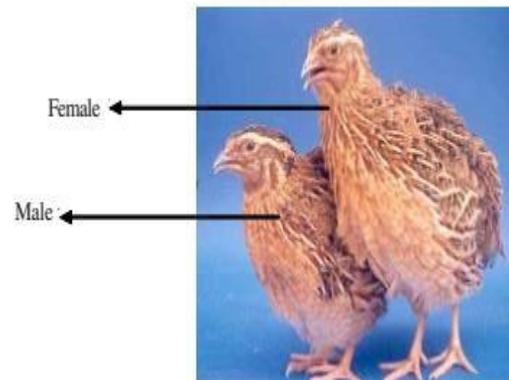


Fig.: Quail Male and Female

Quail Characteristics and Advantages

Quails are small game birds belonging to the pheasant family. The Japanese quail, which is the most commonly farmed species, has several unique characteristics that make it ideal for farming:

- Small size: Adult birds weigh only 150-200g
- Fast growth: Reach market weight of 180-200g in 5-6 weeks
- Early sexual maturity: Begin laying eggs at 6-7 weeks of age
- High egg production: Lay 280-300 eggs per year
- Efficient feed conversion: Consume only 20-30g feed per day
- Low space requirement: 8-10 quails can be housed in the space of one chicken
- Disease resistance: More resistant to common poultry diseases
- Short generation interval: 3-4 generations possible per year
- Nutritious products: Eggs and meat are high in protein and low in fat/cholesterol

These attributes allow for rapid stock multiplication, quick returns on investment and efficient production of eggs and meat. Quail eggs and meat are also gaining popularity as delicacies and health foods.

Breeds and Varieties

Egg-type breeds:

- CARI Pearl: White egg layer, 140g body weight, 285-295 eggs/year
- CARI Sweta: White feathered, 155-165g body weight, 240-250 eggs/year

Dual-purpose breeds:

- CARI Suneheri: Brown feathered, 182g body weight
- CARI Brown: Completely brown feathered, 180-185g body weight
- CARI Ujjwal: White breasted, 175g body weight

Meat-type breed:

- CARI Uttam: 240g body weight at 5 weeks

Housing and Management

Quails can be reared in deep litter floor system or cage system. The cage system is more common for commercial operations.

Housing requirements

Quails are reared in deep litter floor systems. Housing should be oriented east-west for proper ventilation, with a width not exceeding 9 meters for good air exchange. Side walls should be 2.5-3 meters high, with a gable roof and 1.5-meter overhang. Concrete flooring raised 2-3 feet above ground level is recommended, with wire mesh on upper walls for ventilation. Space requirements increase with age, from 75 cm² per bird for chicks to 150 cm² for adults.

Space requirements

Age	Floor Space	Feeder space	Water space
0-2 weeks	75 cm ² /bird	2 cm/bird	1 cm/bird

3-5 weeks	100 cm ² /bird	3.5 cm/bird	2 cm/bird
6-8 weeks	125 cm ² /bird	5 cm/bird	2.5 cm/bird
>8 weeks	150 cm ² /bird	7 cm/bird	4 cm/bird

Cage rearing

For cage rearing, multi-tier battery cages are typically used. Standard cage dimensions are 120 cm length, 60 cm width and 25 cm height, accommodating 20-30 adult birds. Cages should include provisions for feeders, waterers and dropping trays. Environmental conditions are crucial, especially during brooding. Temperature should start at 37-38°C for chicks, reducing by 3°C every 4 days until reaching 21-22°C for adults. Relative humidity should be maintained at 55-65%. Lighting needs vary, with 24 hours required for the first 2-3 weeks, then 14-16 hours for layers.



Fig.: Cage system of Quail rearing

Environmental conditions

- Brooding temperature: Start at 37-38°C, reduce by 3°C every 4 days
- Adult temperature: 21-22°C
- Relative humidity: 55-65%
- Lighting: 24 hrs for first 2-3 weeks, then 14-16 hrs for layers

Proper housing and environmental management is crucial, especially during the brooding period, to ensure good growth and productivity.

Feeding and Breeding Management

Proper nutrition is essential for quail health and productivity. Due to their rapid growth and high egg production, quails have relatively high nutrient requirements. Feed should be provided in mash or crumble form, with nutrient levels adjusted according to the birds' growth stage. For starter feed (0-3 weeks), protein content should be 25-27%, with 2750 kcal ME/kg energy, 1.0% calcium and 0.45% available phosphorus. Grower feed (4-6 weeks) requires 22-24% protein, while layer/breeder feed (7 weeks onwards) needs 20-22% protein and 3.0% calcium. Vitamins and minerals should be supplemented as per standard recommendations. Adult birds typically consume 20-25 grams of feed per day.

Breeding management is critical for successful quail production. Parents between 10-30 weeks of age should be used for optimal fertility, with a male to female ratio of 1:3. Eggs should be collected 4 days after introducing males and selected based on cleanliness, uniform size and shape. Proper egg storage at 13°C and 75% relative humidity is important, with a maximum storage time of one week. Incubation requires 18 days at 99.5-100.5°F and 60% humidity, with eggs turned at least 8 times daily for the first 15 days. On day 15, eggs are transferred to a hatcher at 98°F and 70% humidity. Chicks typically hatch on day 18, weighing only 6-9 grams and requiring careful

brooding. Proper brooding management in the first 2 weeks is critical to prevent early chick mortality. Overall, good nutrition, housing and sanitation practices are crucial for maintaining quail health.

Health Management

While quails are generally hardy, they can be susceptible to certain diseases. Common health issues include ulcerative enteritis, coccidiosis, aspergillosis and E. coli infections. Preventive measures and treatments include using streptomycin for ulcerative enteritis, amprolium for coccidiosis and calcium propionate to prevent aspergillosis. Tetracycline can be used to treat E. coli infections. Key health management practices include maintaining strict biosecurity and hygiene, providing proper warmth to chicks, avoiding overcrowding, ensuring good ventilation and using antibiotics judiciously under veterinary guidance. Deworming and vaccinations should be carried out as per local recommendations.

Marketing and Economics

Quails can be marketed for meat at 5-6 weeks of age, weighing 180-200g. Eggs can be sold from 6-7 weeks onwards. The economics of quail farming are generally favorable:

- Low initial investment compared to chicken farming
- Quick returns due to early marketing age
- High profitability due to efficient feed conversion
- Growing demand for quail meat and eggs

The main costs are feed (65-70%), chicks (15-20%) and labor (5-10%). Proper marketing channels need to be established for regular and remunerative disposal of birds and eggs.

Key challenges include:

- High feed cost
- Inadequate credit availability
- Licensing requirements
- Lack of organized marketing

Conclusion

Quail farming offers significant potential as an alternative poultry enterprise, especially for small and marginal farmers. The unique characteristics of quails allow for efficient production of nutritious eggs and meat. With proper management practices covering housing, feeding, breeding and health care, quail farming can be a profitable venture. Increasing consumer awareness and demand for quail products further enhances the scope of this industry. However, continued research on breed improvement, cost reduction and value addition is needed to fully harness the potential of quail farming. Overall, quail production presents a promising opportunity to enhance nutrition, generate employment and increase farm incomes.

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