Feeding management of native chicken, ducks, quails and turkeys

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Feeding of Native Chicken

- Backyard or homestead poultry farming is common among rural and landless families.
- The improved layer varieties have the potential to produce 140-170 eggs in a laying year under free range conditions and 160-200 eggs under organized farm conditions.
- The birds weigh on average 2.5-3.5 kg in males and 1.5-2.0 kg in females.

Feeding of Native Chicken

- **Rearing system**

1. Backyard

2. Semi-intensive

3. Intensive

Improved varieties developed for meat and dual purposes cannot fly owing to their weight and are susceptible to predators.

They require more feed supplement to meet their nutritional requirements.

Feeding of Native Chicken

- **Semi- intensive Poultry Housing System**

Feeding of Native Chicken

Feeding of Native Chicken

Feeding management

- **Chick starter ration** during the initial six weeks under nursery rearing or brooding.
- **Growing stage -** Besides the feed material available in free range, provide
  1. Wastegrains, germinated seeds, mulberry leaves, azolla, green leafy vegetables -drumstick leaves and subabul leaves (high protein sources).

Feeding of Native Chicken

Need for supplementation

- Extra feed will depend on the free range available, intensity of vegetation, availability of waste grains, insects etc.

Under free range conditions, the birds meet their protein requirements through scavenging,
but the risk of energy deficiency is common.
Feeding with locally available cereals like maize, sorghum, pearl millet, broken rice with equal parts of rice bran is essential.
However, the nutrient intake of scavenging birds varies with place and season, crops grown and the natural vegetation available.

Feeding of Native Chicken

- During the rainy season and harvest time - worms, insects and post-harvest leftovers will be plenty.
- During the dry season of scarcity, feed supplements, including household waste (kitchen leftovers) and oilseed cakes have a positive effect on egg production and body weight of scavenging birds.

Nutrient requirements (as fed basis) of improved native birds and their crosses

	Frizzle or Naked Neck X CARI-Red (HitCARI and UpCARI)				Aseel or Kadaknath			
Age, weeks	0-4	4-12	12-20	Laying	0-4	4-12	12-20	Laying
CP (%)	20	16	12	16	18	18	14	16
ME (kcal/kg)	2,600	2,600	2,600	2,600	2,700	2,700	2,500	2,600
Lysine (%)	0.92	0.75	0.56	0.85	0.85	0.85	0.65	0.85
Methionine (%)	0.42	0.34	0.26	0.31	0.38	0.38	0.30	0.31
Threonine (%)	0.75	0.63	0.47	0.63	0.70	0.70	0.55	0.63
Calcium (%)	1.0	0.90	0.80	3.20	1.0	0.90	0.80	3.00
Available Phosphorus (%)	0.40	0.35	0.32	0.30	0.40	0.35	0.32	0.30

ICAR, 2013 Nutrient Requirements of Poultry

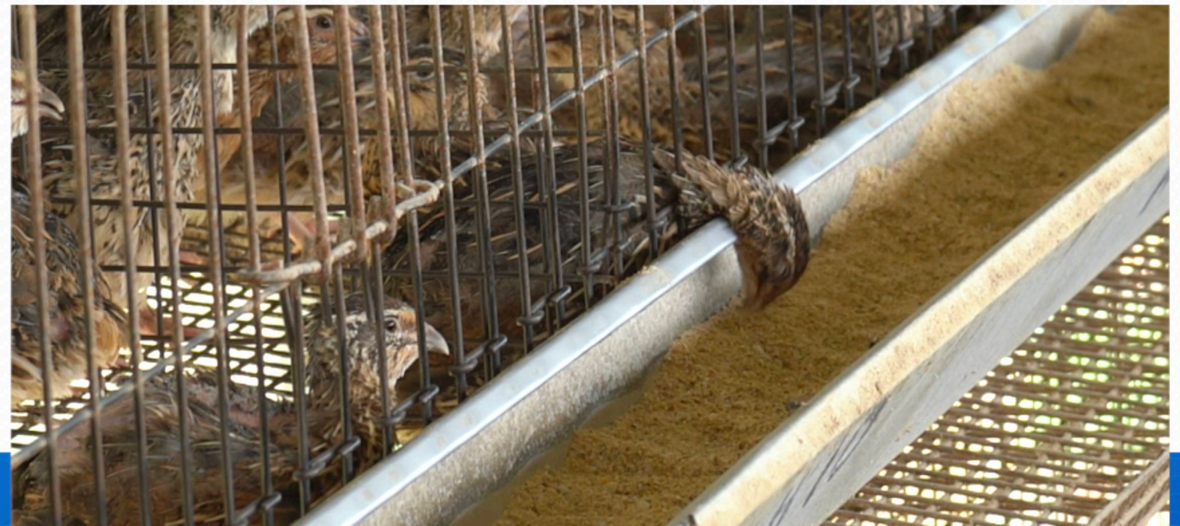
Model ration for meat and egg type native chicken

Ingredients (%)	Chicks (up to 8 weeks)	Growers (up to 20 weeks)	Laying hens
Grains (maize, bajra, ragi, broken rice, cassava chips, wheat etc.)	50	40	50
Oil cakes (ground nut, soybean meal, sunflower meal, til / Gingelly, coconut oil cake)	35	30	30
Fish meal / meat cum bone meal	5	5	5
Bran (rice / wheat bran, husks / hulls)	7.7	22.7	10.7
Shell grit / oyster shell / stone grit	0	0	2
Mineral and vitamin mixture	2	2	2
Salt (sodium chloride)	0.3	0.3	0.3
TOTAL	100	100	100

The composition is indicative and can be modified based on production performance
Feed additives such as liver tonics / toxin binders / enzymes may be used on need basis

Feeding of Japanese quails

- Japanese quails (Coturnix coturnix japonica) - meat and egg production.
- Most of the quails come under Wildlife Protection Act. Japanese quails and the Bob white quails are allowed to be reared under captivity.
  Quail - fast growth, early sexual maturity (produce 4 generations in a year) and high rate of egg production.
- Quails meat and eggs - less fat and cholesterol and friendly to cardiac patients.
- During egg production, the feed consumed is 25 to 28 g/bird/day and during peak production period, feed conversion ratio can be 3.3.



Egg production

Japanese quails mature by 8 weeks of age

Peak egg production - 13-15 weeks of age.

Produce eggs which are about 8% of their body weight; whereas, in chicken, it is about 3.5 % of body weight.

Eggs laying time - between 3 pm and 8 pm.

The eggs weigh around 10 g and are highly mottled

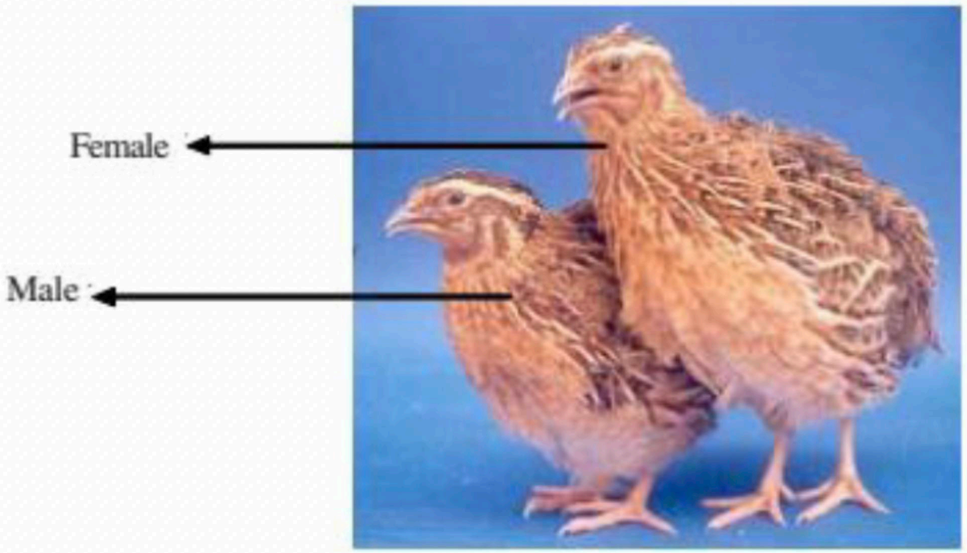
- Body weight (5th weeks): 200 – 250 g
- Daily feed: 25 - 30 g
- FCR (5th week): 2.5 – 2.8
- Hatchability : 65 – 75 %
- Age at 50% Egg Production: 8 - 9 weeks
- Hen day production: 280 - 300 eggs

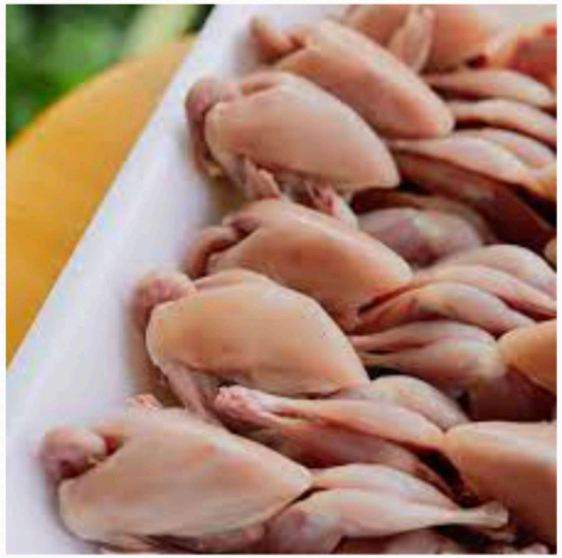
Composition of eggs

10 g egg contains 7.46 g water, 1.31 g protein, 1.12 g fat and 0.11 g of total ash.

Egg production

- Females are heavier than males and weigh 20 – 30 gm more than males.
- Female quails start laying eggs at 7 weeks of age and continue up to 22 weeks of age
- Eggs production gradually decrease after their first year of laying period.
- The ready-to-cook yield (including giblets) ranges from 74 to 76 per cent.





- The feed ingredients used for formulation are similar to that for chicken.
- However, usage of animal feed ingredients like fish meal and meat meal can be avoided, since they are prone for clostridia contamination.
- Unlike chicken, quail waste more quantity of feed that can be prevented by designing suitable feeder with grill.

Nandanam Breeder Quail

Large Scale Duck Production in Free Range

Few Advantages of Duck farming …..

- Easy source of protein for nutritional security.
  (Bigger egg size: 10-15 g more than chicken egg)
- Used to lay **eggs for long** period (3-4 yrs)
- Utilise feeding source from both **land & water**
  (Consume snail, molluscs, weeds & aquatic feed)
- Enriches soil and water
- Hardy and withstand **calamities** *(less disease)*
- **Integrated** with other crops (*Rice-Fish-Duck)*
- Less infrastructure and **capital investment**
- Women Friendly

Nutrient composition of fresh Duck & Chicken egg

Proximate Composition	Unit	Duck Egg (Per 100g)	Chicken Egg (Per 100g)
Water	g	70.83	76.15
Energy	kcal	185.00	143.00
Protein	g	12.81	12.56
Total Lipid	g	13.77	9.51
Ash	g	1.14	1.06
Carbohydrate & sugar	g	2.38	1.09
calcium	mg	64.00	56.00
Iron	mg	3.85	1.75
Magnesium	mg	17.00	12.00
Vitamin A	µg	194.00	160.00
Vit B12	µg	5.40	0.89

Feed composition of Ducks (*Intensive management)*

Ingredient (kg)	Starter (0-8 wk)	Grower (9-16 wk)	Layer (Above 17 wk)
Wheat	60	55	55
Deoiled rice bran	--	25	07
Soyabean meal	32	14	18
Fish meal	05	03	07
Mineral mixture	02	02	03
Oyster shell grit	01	01	10
	100 kg	100 kg	100 kg
Crude protein (%)	20.11	16.09	18.19
M Energy (K cal/kg)	2723	2538	2608

Cost of feed = Rs 34/- per kg (approx)
Maize is replaced by wheat due to aflatoxin
Wheat can be partially (upto 50 %) replaced by broken rice, casava /other locally available energy source and cost can be reduced.

Performance of ducks
(Production and Reproduction) under intensive management

Parameters	Khaki Campbell	Native ducks	White Pekin
Body wt (12th wk)	1426 g	1313 g	2251 g
Body wt (20th wk)	1540 g	1515 g	2512 g
Age at first egg	18th wk	20th wk	26th wk
No of eggs by 40th wk age	102	88	---
Average wt of egg	66 g	68 g	76 g
Mortality up to 10 wk age (%)	5 - 7	3 - 4	--

Table 13. Nutrient requirements (as fed basis) of Ducks

Nutrients	Starter	Grower	Rearer	Layer
Age, weeks	**0-8**	**8-16**	**16-20**	**>20**
Protein (%)	20.5	16.5	15	16.5
ME (kcal/kg)	2,800	2,650	2,500	2,650
Linoleic acid (%)	1.0	1.0	0.8	1.0
Lysine (%)	1.0	0.75	0. 60	0.75
Methionine (%)	0.45	0.35	0.30	0.3
Methionine + Cysteine (%)	0.85	0.65	0.60	0.75
Calcium (%)	1	1		3
Available Phosphorus (%)	0.42	0.35	0.35	0.35
Manganese (mg/kg)	60.	50	40	50
Sodium (%)	0.17	0.15	0.15	0.17
Chlorine (%)	0.12	0.12	0.12	0.12
Vitamin A (IU/kg)	3,200	2,250	2,250	4,000
Vitamin D3 (IU/kg)	400	350	350	650

Niacin - bowed leg condition and weakness.

55–70 mg/kg of feed appears to be satisfactory for ducks, geese, and turkeys.

5-7% brewer's yeast may be added in broiler and starter ration

Niacin supplements in powder or tablet form– can be added at the rate of 10 mg of niacin per litre of drinking water until 10 weeks of age.

Turkeys, ducks, pheasants, and goslings are much more severely affected by niacin deficiency than are chicken.

Conversion of tryptophan to niacin.

Ducks and turkeys - bowing of the legs and an enlargement of the hock joint.

Difference between the leg seen in niacin deficiency and perosis as seen in **manganese and choline** deficiency is that with niacin deficiency the Achilles tendon seldom slips from its condyles.

Annual consumption of duck feeds is about 50-60 kg.

They require about 3-4 kg. feed for a dozen of eggs and 3.22 kg. feed for every kg. of meat.

Under intensive system, mash, pellets or crumbs can be used.