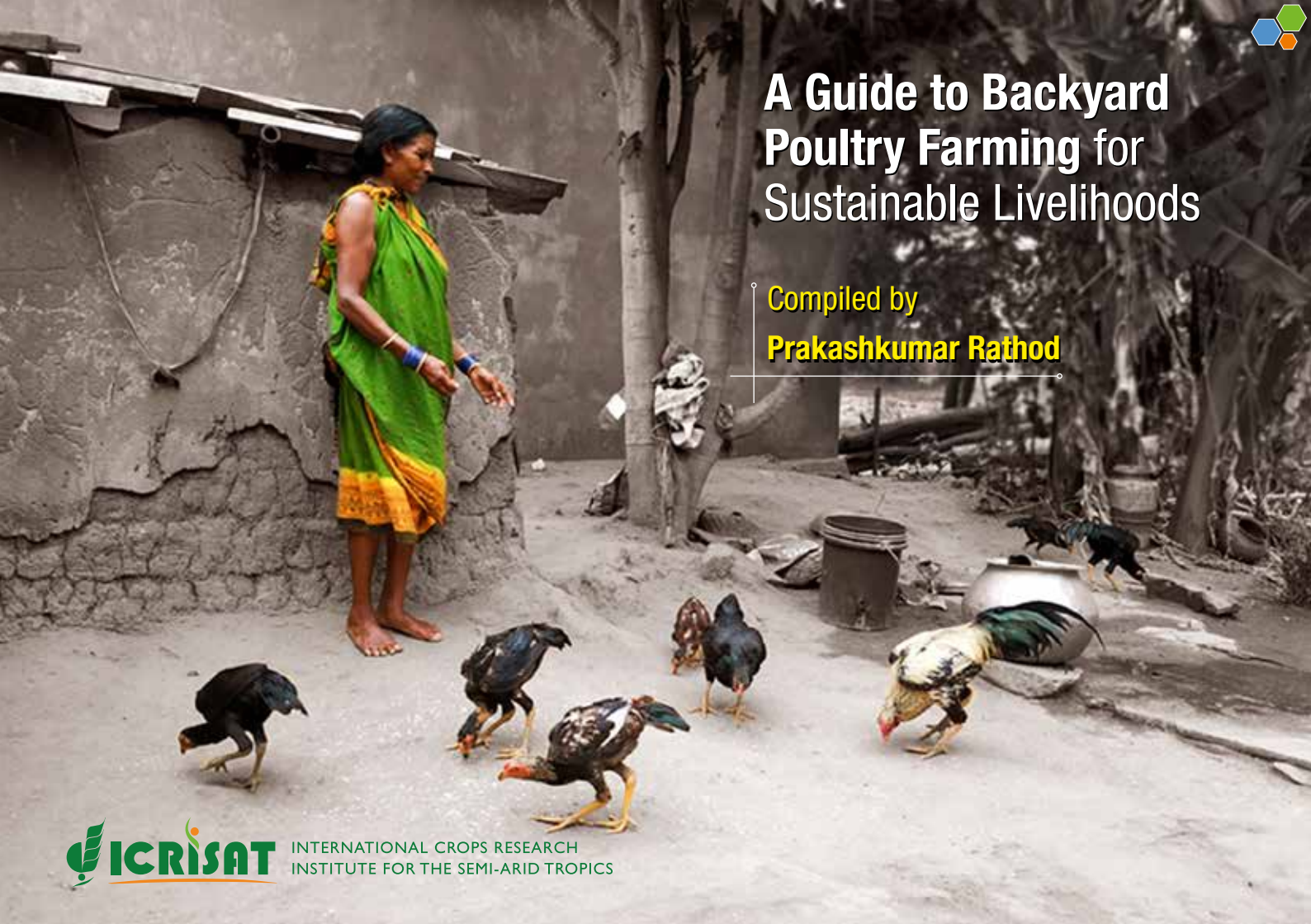


A Guide to Backyard Poultry Farming for Sustainable Livelihoods

Compiled by

Prakashkumar Rathod

ICRISAT
INTERNATIONAL CROPS RESEARCH
INSTITUTE FOR THE SEMI-ARID TROPICS

Citation: Rathod P. (2020). A Guide to Backyard Poultry Farming for Sustainable Livelihoods. Hyderabad 502 324, Telangana, India: International Crops Research Institute for the Semi-Arid Tropics. 28 pp.

Cover photo:
Source: Alekha, Harsh Trust, Nabarangpur, Odisha

Contents page and back cover (inside) photo:
Source: Sudhir Naik, Veterinary College, Bengaluru, Karnataka

Back cover photo:
Source: Maktum Tahshildar, ICRISAT Scientific Officer, Dharwad, Karnataka

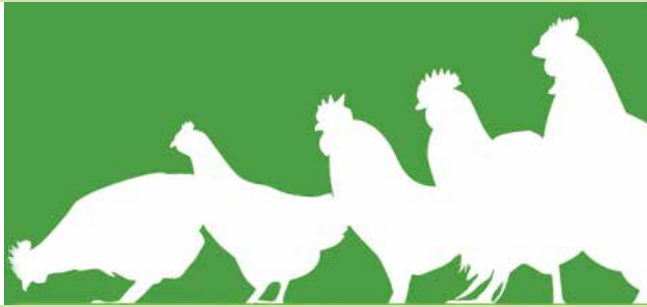
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IDC ICRISAT DEVELOPMENT CENTER

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Acknowledgement

The author acknowledges the valuable inputs of:

- Dr Sariput Landge, Maharashtra Animal and Fisheries Sciences University, Nagpur
- Drs Anant Rao Desai, Siddalingswamy Hiremath and Sudhir Naik, Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, Karnataka.
- Dr M Rajalakshmi, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry.



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Introduction

Backyard or homestead poultry farming is common among rural and landless families in India and is a lucrative source of supplementary income. It involves low investment and yields high economic returns, and can be easily managed by women, children and the elderly. Meat and eggs from such birds are inexpensive and rich source of protein and energy for poor households.

Backyard poultry farming is characterized by an indigenous night shelter system, scavenging, natural hatching of chicks, low productivity of birds, scant supplementary feed, local marketing and minimal health care practices.

The organized or commercial poultry sector in India contributes nearly 75% of the total meat and egg output while the unorganized sector contributes 25%. According to the 20th Livestock Census reports of the Government of India, total poultry population is 851.81 million (including backyard poultry population of 317.07 million), which is a 45.8% rise over previous livestock censuses (http://www.dahd.nic.in/division/provisional-key-results-20th-livestock-census). Egg production in India was around 95.2 billion and per capita availability (PCA) around 74 per annum during 2017-18 (http://www.dahd.nic.in/documents/reports).

India aims to produce 106 billion eggs and reach a PCA of 81 eggs per annum by 2020. With regard to poultry meat production, India targets to produce 4.20 million tons with a PCA of 3.21 kg/annum by 2020 against 3.30 million tonnes of meat and PCA of 2.22 kg per annum in 2015 (http://www.dahd.nic.in/sites/default/filess/Seeking%20Comments%20on%20National%20Action%20Plan-%20Poultry-%202022%20by%2012-12-2017.pdf). In this context, the rural poultry sector can fill this gap to meet these targets. Moreover, products of rural poultry have a niche market and fetch higher prices than commercial poultry.

While a majority of rural folk in India are well versed with traditional livestock rearing including that of poultry, transforming poultry management through a few scientific interventions can lead to sustainable livelihoods from regular income, food security and nutrition. This brochure focuses on rural poultry production, which includes backyard rearing of desi/native chickens and rearing of new chicken breeds evolved for poultry production by rural Indian households.

Bonuses of backyard poultry farming

A source of employment to small and marginal farmers, including women and unemployed youth

Provides additional **income**

Enhances soil fertility (15 chickens produce 1-1.2 kg of manure/day).

Products fetch a higher price compared to those from commercial poultry farming

Egg and meat with **low investment**

Helps control ecto-parasites in **domestic animals**

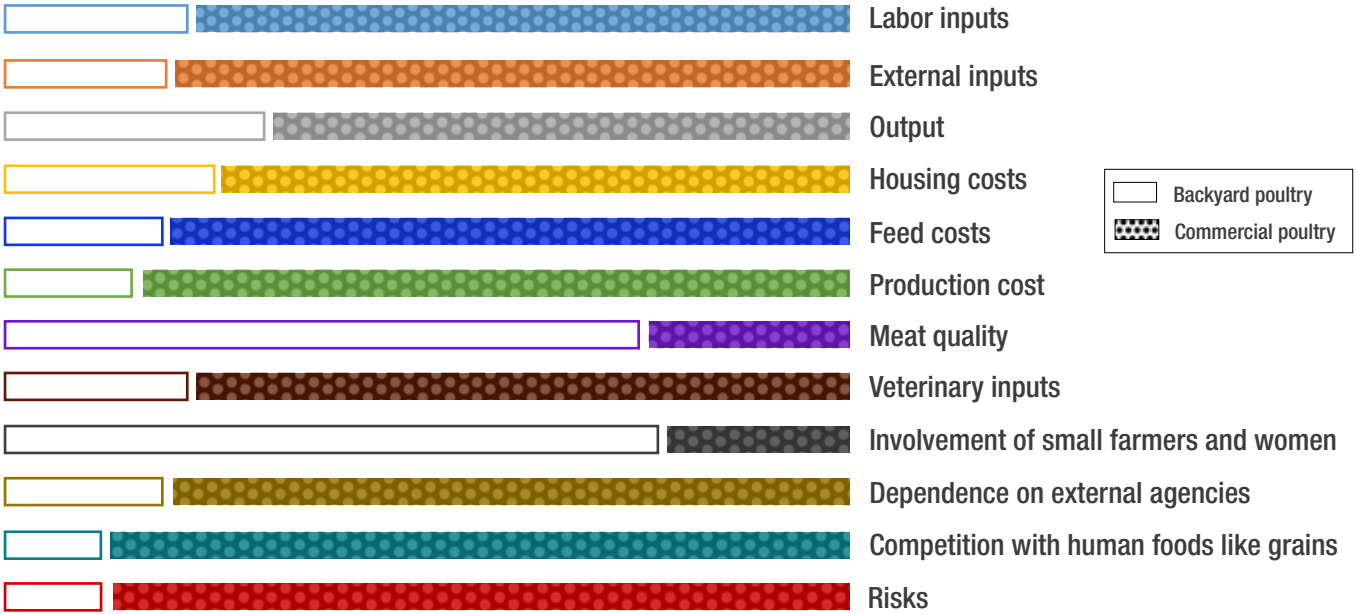
Eggs and meat contain low levels of cholesterol and saturated fats and high levels of vitamin compared to meat from commercial poultry

Accessible source of **nutrition for families**



Source: RIVER, Puducherry

Backyard Vs commercial poultry



Housing for backyard poultry can be made with local resources and hence inexpensive

Backyard birds scavenge or can thrive on leftover cereals, requiring no supplements and hence inexpensive

Backyard poultry need negligible veternary inputs, with the exception of vaccination for New Castle Disease. Commercial poultry requires viral, bacterial and parasitic control.

Commercial poultry needs clean water supply while backyard poultry can thrive on local sources

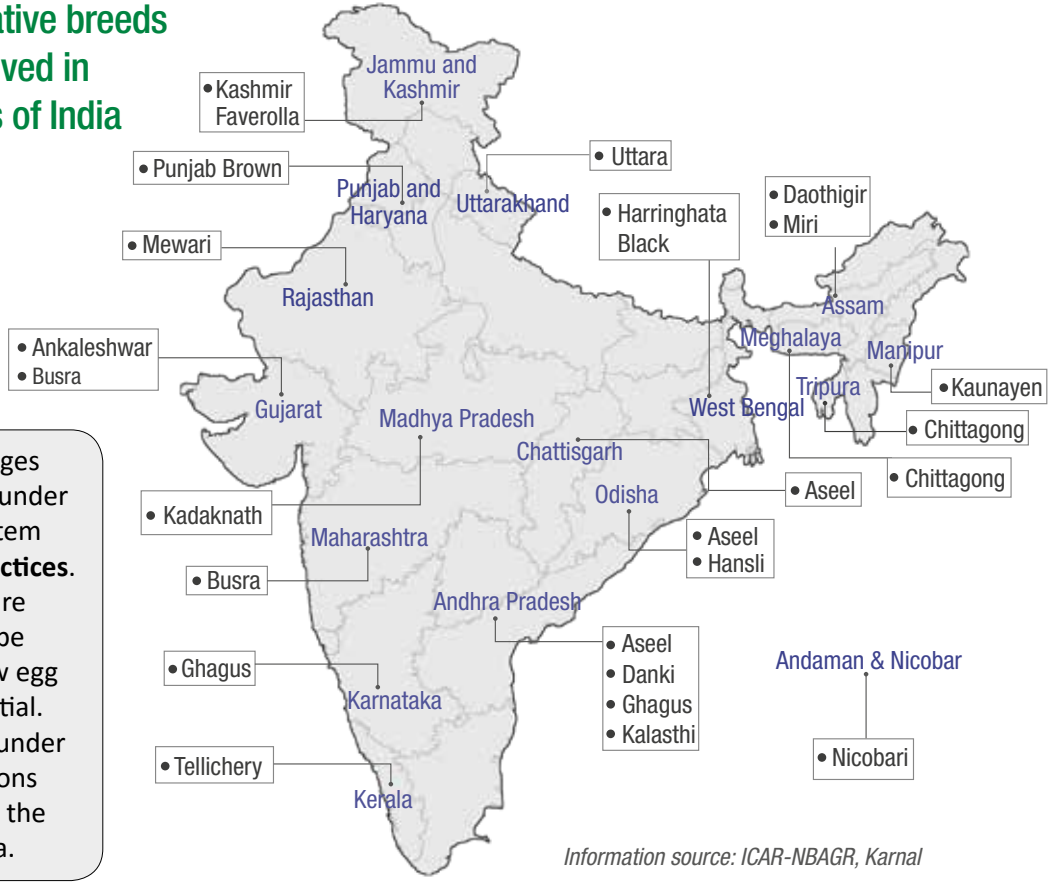


Source: ICAR-NBAGR, Karnal

What sets indigenous birds apart?

- **Superior adaptability** to their habitat and ability to survive, can reproduce with low nutrition under sub-optimal management.
- **Require fewer inputs** as they scavenge and are raised with little veterinary care.
- **Exhibit broodiness** and hatch their own chicks.
- **Their eggs and meat** are preferred and fetch a premium price compared to commercial farm-bred chickens.
- **Can protect themselves** from predators.
- **A reservoir** of superior genes.
- **Act as insurance** for the poor during difficult times.

Indigenous/native breeds that have evolved in different parts of India



Information source: ICAR-NBAGR, Karnal

In this system, flock size ranges from five to 50 birds raised under a traditional scavenging system **devoid of management practices**. Backyard chickens in India are generally the native/d*esi* type (19 poultry breeds) with low egg and meat production potential. Desi chicken breeds grown under free range backyard conditions contribute about 10-12% of the total egg production in India.

Ankaleshwar

Ave. weight

1.8 kg Roosters | **1.6 kg** Hens

Age at first egg laying **6 months**

Annual egg production is 78-80.

Small, single combed, hardy with poor productivity. Reared by the tribes of Narmada and Bharuch districts.

Aseel

Ave. weight

3-5 kg Roosters | **3 kg** Hens

Age at first egg laying **6.7 months**

Annual egg production is 30-35.

A pugnacious and high stamina game bird with a majestic gait; larger among native birds (28 inches from back to toe)

Harringhata Black

Ave. weight

1.3 kg Roosters | **1.1 kg** Hens

Age at first egg laying **5.6 months**

Small bodied black bird with typical conformation of a layer

Annual egg production is 45.

Chittagong

Ave. weight

3.5-4.5 kg Roosters

3-4 kg Hens

Large game bird; Found in Northeastern states of India

Danki

Ave. weight

3.1 kg Roosters | **2.2 kg** Hens

Age at first egg laying **7.4 months**

Heavy bird with glossy and lustrous plumage and compressed single comb

Annual egg production is 32.

Daothigir

Ave. weight

1.8 kg Roosters | **1.6 kg** Hens

Age at first egg laying **6 months**

A heavy breed with good juvenile growth and mostly reared by the Bodo community.

Annual egg production is 60.

Busra

Ave. weight

1.1 kg Roosters | **1.0 kg** Hens

Age at first egg laying **6 months**

Small to medium sized bird

Annual egg production is 45-55.

Ghagus

Ave. weight

2.1 kg Roosters | **1.4 kg** Hens

Age at first egg laying **5.7 months**

Small bird with small comb and wattles, thick neck and feathered shanks; some possess whiskers.

Annual egg production is 52.

Hansli

Ave. weight

3.8 kg Roosters | **2.5 kg** Hens

Age at first egg laying **7.2 months**

Annual egg production is 67.

Uttara

Ave. weight

1.3 kg Roosters | **1.1 kg** Hens

Age at first egg laying **5.5 months**

Compact, light body and strong wings that enable quick flight and to fight predators; attractive plumage; suitable for backyard rearing; good taste of meat

Annual egg production is 137.

Kadaknath

Ave. weight

1.6 kg Roosters | **1.2 kg** Hens

The skin, beak, shank, toes and soles of roosters and hens are dark gray; comb, wattle and tongue have a purplish hue; most internal organs show black pigmentation.

Annual egg production is 80.

Kalasthi

Ave. weight

2.5 kg Roosters | **1.8 kg** Hens

Age at first egg laying **7.2 months**

Similar to Danki except that these are smaller; the average weight of the bird is 1-1.2 kg

Annual egg production is 34.

Kaunayen

Ave. weight

3.0 kg Roosters | **2.3 kg** Hens

Relatively short shank and long thigh; broad and round rib cage; long body, bonier than fatty type, erect standing posture with head held high.

Annual egg production is 35.

Kashmir Faverolla

Age at first egg laying **7 months**

Small with small feathered comb and wattles and the average weight of the bird is 1-1.2 kg.

Annual egg production is 70-75.

Mewari

Ave. weight

1.9 kg Roosters | **1.2 kg** Hens

Age at first egg laying **6.8 months**

Annual egg production is 43.

Miri

Ave. weight **1.5 kg**

Age at first egg laying **7 months**

Dual-purpose, small black bird. Reared by the Miri tribe.

Annual egg production is 62

Nicobari

Ave. weight

1.8 kg Roosters | **1.3 kg** Hens

Age at first egg laying **6.6 months**

Good layer among native birds; brown matte in color, small size with short legs; round and compact in appearance with a stout neck.

Annual egg production is 148.

Punjab Brown

Ave. weight

2.1 kg Roosters | **1.5 kg** Hens

Age at first egg laying **5.5 months**

Meat type with brown plumage, yellow beak, legs.

Annual egg production is 70.

Tellichery

Ave. weight

1.6 kg Roosters | **1.2 kg** Hens

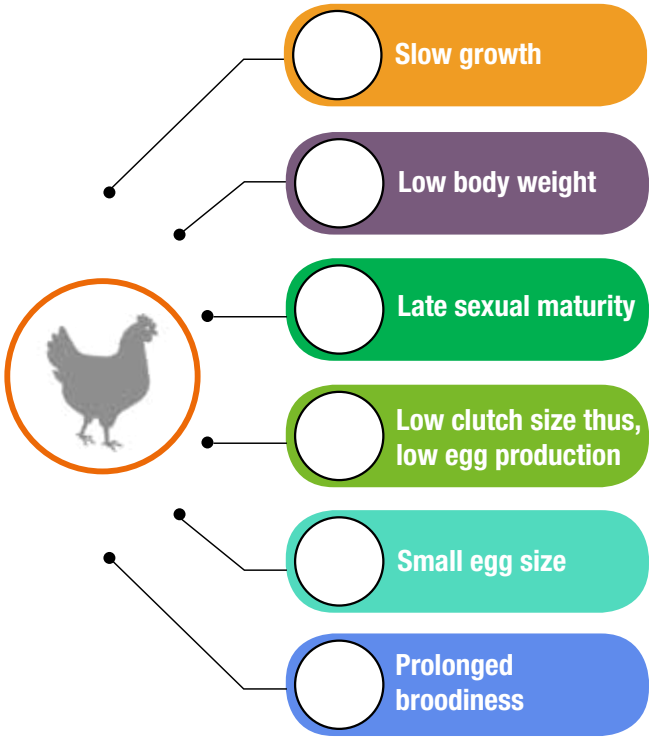
Age at first egg laying **6 months**

Small bird with black skin; plumage color varies from black to grey and sometimes a combination of colors.

Annual egg production is 70.

Source: ICAR-NBAGR, Karnal, Haryana

Limitations of indigenous backyard poultry



Improved backyard poultry

Given some of the limitations of indigenous backyard poultry breeds, research organizations and private institutions have developed improved varieties of birds for meat, eggs or dual purpose. Improved varieties lay more eggs, gain greater body weight, have attractive plumage, involve low input costs, have high disease resistance, a better survival rate and lay large brown eggs resembling *desi* eggs. However, *desi* hens can be used for brooding eggs of improved bird varieties.

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. A few improved egg purpose varieties developed in India are discussed.



Gramapriya
Source: ICAR-DPR, Hyderabad

Improved varieties developed in India for their eggs for rural poultry production

Gramapriya

Age at sexual maturity **170-175 days**

Body weight at 6 weeks is 0.4-0.5 kg and at 72 weeks 1.8-2 kg.

Annual egg production is 170-190.

Developed at ICAR-DPR, Hyderabad, Telangana.

CARI Nirbheek

Ave. weight (20 weeks)

1.8 kg Roosters | **1.3 kg** Hens

Age at sexual maturity **176 days**

A cross between the Indian native breed Aseel and CARI Red.

Annual egg production is 198.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.



CARI Nirbheek *Source: ICAR-CARI, Izatnagar*

CARI Hitcari

Ave. weight (20 weeks)

1.7 kg Roosters | **1.3 kg** Hens

Age at sexual maturity **178 days**

A cross between the Indian native Naked Neck and CARI Red.

Annual egg production is 200.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

CARI Upkari

Ave. weight (20 weeks)

1.6 kg Roosters | **1.2 kg** Hens

Age at sexual maturity **165 days**

Indian native chicken with frizzle plumage crossed with CARI Red; has four different varieties for different agro-climatic conditions.

Annual egg production is 220.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.



CARI Upkari *Source: ICAR-CARI, Izatnagar*

CARI Sonali Layer

Also known as Golden-92. A cross between White Leghorn and Rhode Island Red.

Age at first egg laying **18-19 weeks**

Peak egg production **27-29 weeks**

50% egg production **155 days**

Annual egg production is 280.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

CARI Priya Layer

A cross between superior male and female strains of White Leghorn Commercial white egg layer earlier known as ILI-80.

Age at sexual maturity **17-18 weeks**

Peak egg production **26-28 weeks**

50% egg production **150 days**

Annual egg production is 298.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

CARI Shyama

Ave. weight (20 weeks)

1.4 kg Roosters | **1.1 kg** Hens

Age at sexual maturity **170 days**

A cross between Kadakanath and CARI Red; meat is very rich in protein (25.47 %).

Annual egg production is 210.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.



CARI Sonali Layer *Source: ICAR-CARI, Izatnagar*



CARI Priya Layer *Source: ICAR-CARI, Izatnagar*



CARI Shyama *Source: ICAR-CARI, Izatnagar*

Athulya

Ave. weight (72 weeks)

1.5 kg

Age at sexual maturity **123 days**
Age at 50% egg production 145 days
Annual egg production is 290-300.

Developed at AICRP-KVASU, Mannuthy, Kerala.

Kalinga Brown

Ave. weight (72 weeks)

1.7 kg

Age at sexual maturity **122 days**
Age at 50% egg production 150-155 days.
It is a cross between White leghorn and Rhode Island Red.

Annual egg production is 265-275.

Developed at CPDO, Bengaluru, Karnataka.

Kaveri

Ave. weight (20 weeks)

2-2.2 kg

Good scavenger.
Attains sexual maturity at **183 days.**
Annual egg production is **130-140.**

Developed at CPDO, Bengaluru, Karnataka.

Grama Lakshmi

Ave. weight (72 weeks)

1.7 kg

Age at sexual maturity is 160 days;
Age at 50% egg production 180 days.

Total egg production at 72 weeks is 180-200.

Developed at AICRP-KVASU, Mannuthy, Kerala.

Krishilayer

Ave. weight (72 weeks)

1.7 kg

Total egg production at 72 weeks is 270-280.

Developed at ICAR-DPR, Hyderabad, Telangana.



Source: M Tahshildar, ICRISAT

Improved dual-purpose varieties for backyard poultry production

These are varieties developed for dual purposes. Varieties developed for meat have the potential to gain 1.4-1.6 kg weight in eight weeks under semi-intensive conditions while dual-purpose varieties may gain only 1.2-1.4 kg during the same period. The body weight of these varieties depends on the quality and quantity of feed and management practices followed. A few improved dual purpose varieties developed in India are discussed.

Recently, broiler breed Raja II was developed under AICRP at Veterinary College, Bengaluru, (KVAFSU) with ICAR support. It has plumage similar to backyard rural varieties and gains a weight of 1.6-1.8 kg with feed efficiency of 1.6 in six weeks. However, improved varieties developed for meat and dual purposes cannot fly owing to their weight and are susceptible to predators. They also require more feed supplement to meet their nutritional requirements.

Giriraja

Ave. weight (Eight weeks) 40 weeks

1.6 kg **3-5 kg**

Age at first egg laying **160-170 days**

Annual egg production is 140-150.

Developed at KVAFSU, Bidar, Karnataka.



Giriraja *Source: Dept of Poultry Science, Vet. College, Bengaluru*

Swarnadhara

Ave. weight (Eight weeks) 40 weeks

1-1.2 kg **2.5-4 kg**

Age at first egg laying **160-170 days**

Annual egg production is 180-190.

Developed at KVAFSU, Bidar, Karnataka.

Pratapdhan

Ave. weight (20 weeks)

1.3-2.7 kg

Age at first egg laying **125 days**

Age at sexual maturity **170 days**

Annual egg production is 161.

Developed at AICRP-MPUAT, Udaipur, Rajastan.



Swarnadhara *Source: Dept of Poultry Science, Vet. College, Bengaluru*

Vanaraja

Ave. weight (Six weeks)

0.65-0.75 kg

Age at first egg laying **175-180 days**

Weight at sexual maturity 2-2.2 kg

Annual egg production is 110.

Developed at ICAR-DPR, Hyderabad, Telangana.

Krishibro

Ave. weight

1.5 kg

A feed conversion ratio of about 2 at six weeks of age.

Developed at ICAR-DPR, Hyderabad, Telangana.

Jharsim

Ave. weight (Six weeks)

0.4-0.5 kg

Age at sexual maturity

175-180 days

Weight at sexual maturity 1.6-1.8 kg

Potential to lay 165-170 eggs annually under backyard system.

Developed at AICRP-BAU, Ranchi, Jharkhand.

CARI Debendra

Ave. weight (Eight weeks)

1.1-1.2 kg

A cross from between colored synthetic broiler as male line and Rhode Island Red as female line.

Age at sexual maturity is 155-160 days and feed conversion ratio is about 2.5-2-6 up to eight weeks.

Annual egg production is 200.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

CARIBRO Vishal

Also known as CARIBRO-91

Ave. weight (Seven weeks)

2-2.5 kg

Feed conversion ratio at six weeks is 1.85.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

Kamrupa

Ave. weight (20 weeks)

1.3-2.2 kg

A three-way cross between Assam local type (25%), colored broiler (25%) and Dalhem Red (50%).

Annual egg production is 120-130.

Developed at AICRP-AAU, Guwahati, Assam.



CARI Vishal *Source: ICAR-CARI, Izatnagar*



CARI Debendra *Source: ICAR-CARI, Izatnagar*



Kamrupa *Source: AICRP-AAU, Guwahati*

Nandanam I

Ave. weight (12 weeks)

1 kg

Red plumage, brown shelled eggs and high fertility

Annual egg production is 180.

Developed at TANUVAS, Chennai, Tamil Nadu.



Nandanam I

CARIBRO Tropicana

Ave. weight (Seven weeks)

1.8 kg

Suited to hot and humid regions. Feed conversion ratio at seven weeks is 2.11.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

Nandanam II

Ave. weight (Eight weeks)

1.44 kg

Most popular among semi-urban farmers as backyard birds due to attractive plumage with a feed efficiency of 2.66.

Developed at TANUVAS, Chennai, Tamil Nadu.



Nandanam II

CARIBRO Mrityunjay

Ave. weight (Seven weeks)

1.8-2 kg

A commercial cross suitable for hot and dry regions and feed conversion ratio at six and seven weeks is 1.95 and 2.11, respectively.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.

CARIBRO Dhanaraj

Ave. weight (Seven weeks)

2-2.1 kg

Most preferred by farmers for its multi-colored plumage and high economic returns feed conversion ratio at seven weeks is 1.92.

Developed at ICAR-CARI, Izatnagar, Uttar Pradesh.



CARIBRO Dhanaraj

Aseel Cross

Ave. weight (15 weeks)

1.2 kg

Has two colors black *(*Aseel *Kala)* and Red *(*Aseel *Peela)*.

Annual egg production is 120-140.

Developed at CPDO, Bengaluru, Karnataka.

Srinidhi

Ave. weight (20 weeks)

1.7-2 kg

Age at first egg laying **165-170 days**

Annual egg production is 140-150 under backyard poultry conditions.

Developed at ICAR-DPR, Hyderabad, Telangana.

Narmadanidhi

Ave. weight (20 weeks)

1.3-2.2 kg

A cross between local breed Kadaknath (25%) and improved broiler germplasm (Jabalpur col.) (75%);

Hens mature in about 161 days and produce 181 eggs in backyard system of management.

Developed at AICRP-NDVSU, Jabalpur, Madhya Pradesh.

Chabro

Ave. weight (Eight weeks)

1.6-1.7 kg

26 weeks

2.4-2.5 kg

Annual egg production is 170-180

Multi-colored plumage. Feed conversion ratio is 2.48 and fit for backyard farming.

Developed at CPDO, Bengaluru, Karnataka.



Pratapdhan

Himsamridhi

Ave. weight (20 weeks)

1.2-1.7 kg

Age at first egg laying **170-190 days**

Annual egg production is 140-170.

Developed at AICRP-CSKHPKV, Palampur, Himachal Pradesh.

Vanashree

Ave. weight (20 weeks)

1-1.2 kg

Age at first egg laying **190-200 days**

Annual egg production is 100-120

Developed at ICAR-DPR, Hyderabad, Telangana.



Srinidhi

Management of improved varieties of backyard poultry

Backyard poultry can be reared for egg production in small numbers (10-20) under free range conditions if optimum natural feed resources are available. However, if the local demand is for meat, birds can be reared in larger numbers under intensive/semi-intensive conditions by providing inputs similar to those given to commercial broilers. Consequently, they need to be reared under proper brooding/nursery management up to six weeks, after which they may be released under a free range or scavenging system.



Backyard hen with chicks *Source: P Rathod, ICRISAT*

Brooding/nursery management (up to six weeks)

- Brooding care of chicks ensures constant body temperature and protection from predators.
- The brooder house floor must have a uniform 1-2 inch spread of clean litter like sawdust, paddy husk, rice husk, coconut husk, etc.
- Litter absorbs moisture from poultry droppings and provides warmth in winter and coolness in summer.
- Rake the litter frequently and treat it with slaked lime to avoid caking. Remove moist litter and replace it with fresh litter.
- Spread newspapers on the litter to prevent chicks from feeding on it till they are accustomed to differentiate litter from feed.
- Rear the chicks on standard chick starter ration.
- Brooding can be natural or artificial; the former involves a broody hen and the latter may involve heat sources, reflectors, electric bulbs, etc.
- Secure the brooding area with a brooder guard/ chick guard made of cardboard sheet, GI sheet, wire mesh, mats, etc to restrict bird movement close to the heat source.

Managing adult birds after six weeks

- Let the birds free to forage/scavenge during the day; provide them shelter during night.
- Provide clean drinking water before letting them out.
- The preferred flock size is 12-15 birds per household depending on the area and natural food available.
- Extra roosters can be reared separately and marketed for meat.
- Night shelters should be well ventilated, have adequate light and protection from predators.

The ideal night shelter

- Protects from the weather
- Protects from predators
- Spacious to enable movement
- Adequate ventilation
- A clean environment
- Helps in converting poultry litter into manure
- Reduces disease risk

Constructing a night shelter

- Use low cost and locally available materials like bamboo, wooden planks, polythene sheets, etc.
- Build the shelter in a well-drained area a few inches above the ground to avoid dampness. Provide adequate space per bird and avoid overcrowding.
- For laying hens, dark, raised secure nests with clean nesting material should be available. Nests can be in the fenced area or in the shelter itself.
- Hens lay more eggs if adequate artificial light is available.



Backyard poultry housing *Source: P Rathod, ICRISAT*

Space requirements for chickens.			
Age (weeks)	**Floor space (sq. ft)**	**Feeding space (cm)**	**Watering space (cm)**
0-4	0.5	2.5	1.5
4-8	1.0	5.0	2.0
8-12	2.0	6.5	2.5

- Check for loose or projecting wires, nails, or sharp objects to avoid injuries.
- Should be comfortable, stress free with optimum temperature, fresh air and sufficient light.
- Dimensions for a 10-bird night shelter: 4 ft long x 3 ft wide x 3.5 ft high and 1.5-2 ft above the ground, with a slope 3.5 ft to 2.5 ft.
- Drinker (waterer) and feeder must be in the front with nests or baskets at a back corner of the shelter.

Feed management

- Should be reared on standard chick starter ration during the initial six weeks under nursery rearing or brooding.
- In the second growing stage, besides the feed material available in free range, provide natural food or greens like waste grains, germinated seeds, mulberry leaves, azolla, drumstick leaves and subabul leaves (high protein sources).
- 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 polished rice or rice bran is essential. However, the nutrient intake of scavenging birds varies with place and season, crops grown and the natural vegetation available.
- Restrict feed at six months of age (age of sexual maturity in layers) to control the weight of the birds.
- During the rainy season and harvest time, worms, insects and post-harvest leftovers will be plenty for the birds to feed on.
- 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.

- A handful of grains or kitchen waste in the morning and evening can be given to supplement scavenging.
- The scavenging feed base is very important for propagation of backyard birds. Soil type and cropping systems dominated by wheat, maize, rice, sugarcane and finger millet make up supplementary feed base.
- Supplemental calcium sources like limestone powder, stone grit and shell grit at 4-5 gms per bird daily, especially during the laying phase, leads to a high rate of survival and good egg production.



Source: P Rathod, ICRISAT

- Any feed of grain or household scrap should be given inside the shelter. When regularly provided in the evening, it will help train the birds to willingly enter the enclosure before nightfall.
- A locally available feed formulation includes:
  - ♦ 50% cereals (maize, sorghum, pearl millet, finger millet, broken rice)
  - ♦ 28% bran (rice bran, wheat bran, deoiled rice bran)
  - ♦ 20% meal/oil cakes (soybean meal, groundnut meal, sunflower meal, linseed cake, etc.)
  - ♦ 2% additives (vitamin and mineral mixture).

Importance of fresh drinking water

- Access to fresh, clean and cool water at all times of the day is a must.
- If birds are not provided water for two days, they will cease producing eggs and the birds will start moulting, during which the reproductive physiology of the bird is allowed a complete rest from laying. The bird builds up its body reserves of nutrients and requires at least 10-15 days to restart egg laying.

- A bird can drink twice as much water as its weight as it eats feed. A simple trough, floor-based waterers or hanging waterers can be used.

Breeding management

- A rooster can service six to eight hens to obtain fertile eggs.
- Collect fertile eggs from the nest regularly and store them in a cool and well-ventilated place.
- Place 10-12 eggs under a brooding hen within two weeks of egg collection for higher hatchability.
- Rural hatcheries can be set up using a community-based approach for improved hatchability under field conditions.

Health care

- Vaccinate birds against Marek's disease, Newcastle disease (Ranikhet disease), fowl pox, etc. for greater immunity.
- Deworm birds regularly to protect from internal parasites due to their scavenging nature.
- While debeaking is discouraged in rural poultry given that the birds need to forage and scavenge, it is recommended if the farmer is rearing about 80-100 or more birds to avoid cannibalism, egg biting, feather pecking, etc.
- After the first deworming, repeat at three-week intervals for a total of four deworming sessions.
- While medicating via drinking water, follow the veterinarian's advice on the amount of medicine to be mixed in the water that chicks normally consume in four hours (approximately 6 litres for 100 birds per day, at six weeks).
- Provide extra water only when all the medicated water is consumed.
- Dust and dip the birds or fumigate the house at the slightest indication of external/ecto-parasites.
- Take care not to dip the head and avoid dipping on rainy days.
- Strictly follow the instructions of veterinarians and manufacturers to avoid health hazards.

Debeaking and deworming schedule

31-42 days
First debeaking



42-50 days
First deworming (may be done earlier if worms are noticed)



13-16 weeks
Second debeaking and second deworming



Continue deworming
once in three months or as per requirement

Recommended vaccination schedule for backyard poultry

Newcastle disease
At **day 5-7**
Strain: Lasota
Dosage: One drop
Route: Eye drop

Infectious Bursal disease
At **day 14**
Strain: Georgia
Dosage: One drop
Route: Oral drop

Pox
At **day 21**
Strain: Fowl pox
Dosage: 0.20 ml
Route: Subcutaneous injection

Newcastle disease
At **day 28**
Strain: Lasota
Dosage: One drop
Route: Eye drop

Newcastle disease*
At **Week 9**
Strain: R2B
Dosage: 0.5 ml
Route: Subcutaneous injection

Pox*
At **Week 12**
Strain: Fowl pox
Dosage: 0.20 ml
Route: Subcutaneous injection



Source: RIVER, Puduchery

*Vaccines to be repeated at six-month intervals or as per requirement.
Note: The first day's vaccination for Marek's disease is generally done at the hatchery.

Health care continued...

- Avoid rearing different species of poultry together (chicken with ducks, turkeys etc.). Separate young and adult stock.
- Maintain hygiene in poultry houses and keep equipment clean. Ensure proper disposal of dead birds. Prevent entry of rodents. Though biosecurity is cost intensive, it pays in the long run in terms of fewer losses from infection and good quality production. Periodical culling is advised to control the spread of diseases.

Record keeping

How do you monitor the performance of individual birds? Some basic record keeping is essential.

- This is easy to follow as each hen lays eggs in separate nests and the number of birds reared in backyards is generally small.
- Tracking each hen's egg laying capacity and hatching performance helps in choosing hens to produce the next generation.
- Recording expenses, production and sales provides insights into the economics of backyard poultry farming.
- Record keeping of egg production also helps farmers identify underperforming/best performing birds to either cull/breed them to enhance production.
- Information on vaccination and deworming may also be recorded.

Marketing of Backyard Poultry

While products of backyard poultry are in great demand in India, they require the right market. Community-based approaches like Self Help Groups (SHG), Farmer Producer Organizations and poultry cooperatives can provide the right platform to market the birds without the involvement of middlemen. Encourage marketing on the basis of net weight instead of flock selling.



Source: S. Naik, KVAFSU, Bidar

Information sources for scientific backyard poultry

Several research institutions under the Indian Council of Agricultural Research (ICAR),State Agricultural and Veterinary Universities (https://www.icar.org.in/) and associated Krishi Vigyan Kendras (KVKs) (https://icar.org.in/content/krishi-vigyan-kendra) are involved in developing and promoting indigenous and improved poultry breeds suitable for backyard rearing apart from delivering scientific information on poultry farming. The Department of Animal Husbandry and Veterinary Services of state governments are also involved in such activities. Private industries, Farmer Producer Organizations, Non-Government Organizations, Self Help Groups and Farmers' Associations too promote backyard poultry. Farmers can readily procure pullets from these organizations or procure fertile eggs of native breeds to hatch to make their own stock.

The following organizations (not an exhaustive list) involved in developing and promoting indigenous and improved poultry breeds can provide related information:

- ICAR-Central Avian Research Institute (CARI), Izatnagar, Uttar Pradesh
- Central Poultry Development Organization and Training Institute (CPDOTI), Hesaraghatta, Karnataka
- Central Poultry Development Organization (CPDO), Mumbai, Maharashtra
- Central Poultry Development Organization (CPDO), Chandigarh.
- Central Poultry Development Organization (CPDO), Bhubaneswar, Odisha
- All India Coordinated Research Project (AICRP) on Poultry, Hyderabad, Telangana
- ICAR-Central Coastal Agricultural Research Institute, Goa
- ICAR-Directorate of Poultry Research (DPR), Hyderabad, Telangana
- ICAR-National Bureau of Animal Genetic Resources (NBAGR), Karnal, Haryana
- Karnataka Veterinary Animal and Fisheries Sciences University (KVAFSU), Bidar, Karnataka
- Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), Chennai, Tamil Nadu

- Kerala Agricultural University, Thrissur, Kerala
- Kerala Veterinary and Animal Sciences University (KVASU), Pookode, Kerala
- Maharashtra Animal and Fishery Sciences University (MAFSU), Nagpur, Maharashtra
- Birsa Agricultural University, Ranchi, Jharkhand
- Assam Agriculture University, Khanapara, Guwahati, Assam
- Maharana Pratap University of Agricultural and Technology (MPUAT), Udaipur, Rajasthan
- Nanaji Deshmukh Pashu Chikitsa Vigyan Vishwa Vidyalaya, Jabalpur, Madhya Pradesh
- CSK Himachal Pradesh Agricultural University, Palampur, Himachal Pradesh.



Source: ICAR-NBAGR, Karnal





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Feb 2020