

भारत सरकार/Government of India
ग्रामीण विकास मंत्रालय/Ministry of Rural Development
ग्रामीण विकास विभाग/Department of Rural Development
ग्रामीण आजीविका विभाग/ Rural Livelihoods Division
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दिनांक/ Dated: 25th June, 2024

To,

The State Mission Director / Chief Executive Officer of
State Rural Livelihoods Mission,
All States/UTs.

Subject: Technical Bulletin on Poultry Farming -reg.

Madam/Sir,

I am directed to enclose herewith the Technical Bulletin on Poultry Farming, Breeds of Backyard Poultry and Health Management of Backyard Poultry for information and sharing it with the concerned staff, CRP's and stake holders in the state for enhancing their extension.

Encl.: As above.

Yours faithfully,


रमन वाधवा/(Raman Wadhwa)

उप-निदेशक (प्रशासन)/Deputy Director (Admin)

Copy to:

1. PPS to Additional Secretary (RL), MoRD, Govt. of India, New Delhi.
2. PPS to Joint Secretary, RL-II, MoRD, Govt. of India, New Delhi.



Ministry of Rural Development
Government of India



Technical Bulletin 1

Breeds of Backyard Poultry

DAY-National Rural Livelihood Mission

A. Introduction

The Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) is a flagship program of Govt. of India, dedicated to eradicating poverty and promoting sustainable livelihoods in rural areas. DAY-NRLM focuses on empowering rural women through the formation of Self-Help Groups (SHGs) and community institutions and is making concerted efforts to augment the livelihoods of SHG women through multiple activities which include farm, farm-allied, and non-farm activities. Livestock is one of the crucial components of these activities. It offers SHG women an opportunity to generate income, achieve self-sufficiency, and strengthen their economic prospects.

In India, amidst various livestock farming sectors, back yard poultry has emerged as a lucrative and sustainable venture, catering to the growing demand for quality meat and egg. With its adaptability to diverse environments and relatively low maintenance requirements, poultry farming presents an attractive opportunity for SHG women. This bulletin aims to equip farmers with the knowledge necessary for efficient and profitable poultry farming.

The Technical Bulletin has been structured into three parts to serve as a comprehensive resource for individuals and organizations seeking to enhance their knowledge and skills in poultry farming. Each part offers specific insights and guidance, covering various aspects of poultry rearing, from its significance to the selection of breeds, feeding and health & disease management. By dividing the information into these distinct sections, the Technical Bulletin aims to provide a systematic and accessible resource that equips readers with the knowledge and skills necessary for successful and sustainable backyard poultry. These three parts collectively offer a valuable reference for achieving success in the field.

This section introduces backyard poultry, its relevance, available backyard poultry breeds in India, things to keep in mind while selecting the breed of poultry etc. With the potential to generate sustainable livelihood, backyard poultry offer an accessible and economically viable opportunity for women to secure their financial independence.

B. Backyard Poultry: A Sustainable Livelihood for Women

Poultry as an important supplementary source of cash income is reared by about 89 percent of rural livestock householders. Poultry farming is widely possible in different agro-climatic environments, as fowls have marked physiological adaptability. It requires small space, and less capital investment, also in poultry farming there is quick return and well-distributed turn-over throughout the year, which makes it remunerative in rural as well as urban areas. Traditional backyard poultry production in India is practiced since time immemorial which was the primary source of animal protein and supplementary income for the downtrodden rural poor and the only source of poultry egg and meat for city dwellers before poultry industrialization. The importance of backyard poultry production has been globally recognized to overcome the worsening problems of poverty, hunger and malnutrition in developing countries. Poultry is one of the fastest-growing segments of the agricultural sector in India today. While the production of crops has been rising at a rate of 1.5–2% per annum, that of eggs and broilers has been rising at a rate of 7-9% per annum. According to Directorate of poultry research per capita availability of eggs is 54, while chicken meat consumption is 2.2 kg against the ICMR recommendation of consumption of 180 eggs and 10.8 kg poultry meat per person per annum.

Backyard poultry production forms the basis for transforming the rural poultry sector from subsistence to a more economically productive base. Also, increased backyard poultry production would result in a positive impact on household food security both in terms of increased dietary intake as well as income generation. Hence, increasing meat and egg production from backyard poultry has been a major concern of Government of India for many years and supported by various programmes to improve backyard poultry production.

C. Benefits of Poultry

- Lesser initial investment and higher return.
- Requires lesser land and labor.
- High demand for meat as well as eggs.
- contributes a lot to the rural economy.
- Easy to integrate with agriculture, aquaculture, and other livestock farming.
- Can survive any situation.
- Feed cost is negligible due to better utilization of agricultural byproducts.
- raising the backyard requires a lesser cost of feed.
- Around 900gm body weight in 100-110 days.
- Substantial supplementary feeding and proper housing ensure better productivity.

D. Utility of Backyard Poultry Farming

Backyard poultry, a traditional system of poultry keeping is a part of livestock rearing practiced by rural folks since time immemorial. Further, these are very active in pest control, provide manure and required for special festivals and traditional ceremonies. Backyard poultry is advantageous as it provides supplementary income in shortest possible time with very minimum capital investment, simple in operation and ensures availability of egg and meat even in remote rural areas. As the local birds are used mostly, they got better adaptability and protect themselves from predators and diseases. Backyard poultry, due to its least demanding nature in terms of infrastructure has been widely accepted by the rural poor. Backyard poultry in India is characterized by small flock size consisting of 5-10 predominantly non-descript birds maintained in extensive system under zero or low input venture. It is characterized by indigenous night shelter, scavenging system with little supplementary feeding and natural hatching of chicks due to this the system auto-regenerates. Mainly local birds are reared although there are specific or specialized indigenous breeds in some areas. These breeds represent a rich source of disease-resistant germplasm. The native chicken varieties adopted in free-range backyard conditions for centuries contribute about 11% of total egg production in India[#]. In most of the cases, eggs produced are for home consumption or for limited trade within the village.

Backyard poultry production plays a vital role in rapid growth of economy. It provides livelihood security and availability of food to the family. Unemployed youth and women can also earn an income through poultry farming. Besides income generation, Rural backyard poultry provides the demand of nutrition supplementation in the form of valuable animal protein through meat and eggs to the rural families. It has also been noticed that the demand for rural backyard poultry is quite high in tribal areas.

SOURCE

[#] Journal of Entomology and Zoology Studies 2020; 8(2):1411-1415

E. Breeds of Backyard Poultry

1. **Breed:** Aseel

Habitat: Andhra Pradesh

Characteristics: A game bird known for its pugnacity, high stamina, majestic gait and dogged fighting qualities. Small but firm set pea comb. Bright red wattles and ear lobes. Long and a lender face void of feathers. Comb type: Pea Plumage colour: Red/black Skin colour: yellow Egg shell color: brown Avg annual production: 92 Avg Body weight: Male 4 Kg Female: 2.59Kg



2. **Breed:** Ankaleshwar

Habitat: Gujarat

Characteristics: Small single combined bird well known for its hardiness but poor in productivity. Comb type: Single & Rose Plumage colour: Yellow with black strips Skin colour: Yellow Egg shell colour: Light Brown Avg annual production: 81 Avg Body Weight: Male 1.8 Kg Female: 1.58 Kg



3. **Breed:** Busra

Habitat: Gujarat and Maharashtra

Characteristics: A small to medium sized bird having non significant character. Comb type: Single Plumage colour: white with black/brown Skin color: Pinkish Egg shell colour: Light brown Annual production: 40-55 Avg body weight Male: 1.1 Kg Female: 0.98 Kg



4. **Breed:** Chittong

Habitat: North eastern States

Characteristics: The adult birds are very strong and hardy with quarrelsome temperament. Comb type: Pea Plumage colour: White with golden marks on wings Avg Body weight Male 4 Kg Female 3.5Kg



5. **Breed:** Doathigir

Habitat: Assam

Characteristics: Comb type: Single Plumage color: Black interspersed with white feathers Skin color: Slight creamish towards pinkish Egg shell color: Light brown Annual egg production: 60-70 Avg body weight Male 1.79 Kg Female: 1.63 Kg



6. **Breed:** Danki

Habitat: Andhra Pradesh

Characteristics: A fairly heavy breed with glossy and lustrous plumage with compressed single comb. The cocks with long necks and legs are good fighters. Birds are fairly resistant to diseases. Comb type: Pea Plumage colour: Brown Skin colour: pinkish white Egg shell colour:



Brown Annual egg production: 32 Avg body weight: Male: 3.11 Kg Female 2.22 Kg

7. **Breed:** Ghagus

Habitat: Andhra Pradesh and Karnataka

Characteristics: Small size bird with small comb and wallets. Neck is thick and through out loose somewhat bag like appearance and shank in feathered. Some birds possess whiskers. Birds are hardy and supposed to be resistant to a number of common diseases. Comb type; pea/single Plumage colour: Brown Skin color: White Egg shell color: Light brown Annual egg production: 45-60 Avg body weight Male 1.5 Kg Female 1.2 Kg



8. **Breed:** Haringhatta black

Habitat: West Bengal

Characteristics: A small bodied black bird with typical confirmation of a layer. Plumage color: Black Comb: wallets Red Annual egg production 130 Avg body weight Male 1.5 Kg Female 1.2 Kg



9. **Breed:** Kadaknath

Habitat: Madhya Pradesh

Characteristics: A medium sized egg type chicken. The peculiarity is that most of the internal organs show black pigment. Plumage colour: Silver to gold spangled to blue black Skin colour: Dark grey Egg shell colour: Light brown Annual egg production 80 Avg body weight male 1.6 Kg Female 1.12 Kg



10. **Breed:** Kala hashti

Habitat: Andhra Pradesh

Characteristics: Resemble Dangi bird except they are smaller in size; peacock type bluish in colour and have smaller spur. Comb type: pea/single plumage colour: bluish black Skin color: White-pinkish Egg shell color: Brown Annual egg production: 30-40 Avg body weight Male: 2.48 KG Female: 1.85Kg



11. **Breed:** Kashmir Favorolla

Habitat: J&K

Characteristics: Small sized bird with small comb and wallets, feathered cap on head with feathered shanks. Comb type: single plumage colour: mixed shade of black, red, green, gold black Skin color: White Egg shell color: Light Brown Annual egg production: 85-90 Avg body weight Male: 1.72Kg Female: 1.2Kg



12. Breed: Miri

Habitat: Assam

Characteristics: Naked neck and fizzle birds have been observed in few cases Comb type: single plumage colour: White and brown Egg shell color: Light Brown Annual egg production: 62 Avg body weight Male: 1.52Kg



13. Breed: Nicobari

Habitat: Andaman & Nicobar

Characteristics: Produces highest number of eggs under free range condition among all Indian breeds. Short legged birds. Comb type: single plumage colour: brown skin color: yellow Egg shell color: White/creamy Annual egg production: 148 Avg body weight Male: 1.8Kg Female 1.3 Kg



14. Breed: Punjab Brown

Habitat: Punjab, Haryana

Characteristics: Meat type bird, Plumage pattern is sometimes spotted or striped. Males in particular have black spots/stripes comb type: Single Plumage colour: Brown Skin colour: White Egg colour Brown Annual egg production 60-80 Avg body weight Male 2.15 Kg and Female 1.57Kg



15. Breed: Tellicherry

Habitat: Kerala

Characteristics: Small bird with black skin. The eggs are tinted and small to medium in size. Comb type: Single. Plumage colour: Black with shining blue tinge Skin color: Grey Egg colour: Brown Annual egg production 60-80 Avg body weight Male 1.62 Kg and Female 1.24 Kg



16. Breed: Naked neck

Habitat: Hot and humid coastal regions and North-Eastern states

Characteristics: Neck of the bird is fully naked. The bare skin becomes reddish particular in male as they approach sexual maturity Adaptability of birds is increased in hot humid tropics due to better heat dissipation mechanism. Annual egg production 75-90 Avg body weight Male 3.9 Kg Female 1.4-1.6 Kg



17. Breed: Frizzle fowl

Habitat: Hot and humid coastal regions and North-Eastern states

Characteristics: Ranchis of the feather is curved due to presence of dominant frizzle gene (F) due to which plumage looks curly and heat dissipation is increased. Better adaptability to tropic climate. Average annual egg production: 110, Av body weight in 20 weeks: 1005 gms.



Exotic Breed

18. Breed: Plymouth Rock

Class: American type dual purpose with nearly 7 varieties

Characteristics: Comb: Single, Shanks: yellow, Plumage: Greyish, Broodiness: seldom, Behaviour: can be friendly calm and docile, Dual purpose, Egg color: Brown, Adult weight: Male: 4.2Kg, Female: 3.3 Kg, Female line in broiler breeding. Average annual egg production:160-180



19. Breed: New Hampshire

Class: American Type

Characteristics: Comb: Single, Shanks: yellow, Plumage: Chest nut red, Broodiness: frequent, Behaviour: can be friendly, noisy and docile, Meat purpose, Egg color: Brown, Adult weight: Male: 3.8Kg, Female: 2.9 Kg, Female line in broiler breeding. Average annual egg production:200-220 large, tinted eggs



20. Breed: Rhode Island Red

Class: American type with two Varieties

Characteristics: Comb: Single/rose, Earlobe Red Skin: yellow, Broodiness: average, Behaviour: can be calm, friendly or aggressive (roosters) Dual purpose, Egg color: Brown, Adult weight: Male: 3.8Kg, Female: 2.9 Kg, Eggs: 225-260 /year



21. Breed: Australorp

Class: English type

Characteristics: Comb: Single, Earlobe Red Skin: white, plumage: black, Broodiness: average, Behaviour: can be calm, friendly and/or shy. Dual purpose, Egg color: Brown, Adult weight: Male: 3.8Kg, Female: 3.0 Kg. Average annual egg production: 250



22. Breed: Leghorn

Class: Mediterranean type with nearly 12 varieties

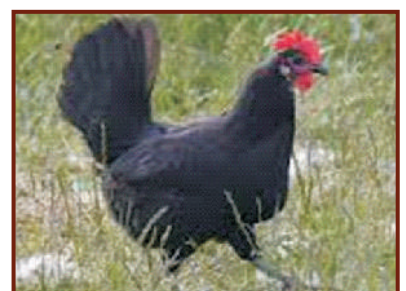
Characteristics: Comb: Single, Earlobe Red Skin: yellow/white, Broodiness: seldom, Behaviour: can be calm, flighty or shy. Breed purpose eggs, Egg color: White, Adult weight: Male: 2.7Kg, Female: 1.8 Kg, Eggs: 290-320/year



23. Breed: Minorca

Class: Mediterranean type with around 5 varieties

Characteristics: Comb: Single/rose, Earlobe white plumage black Skin-white, breed purpose: egg, egg color: white, Adult weight: Male: 4.1Kg, Female: 3.0Kg. Average annual egg production: 120



Improved varieties/Breeds of chicken available in India

24. Variety: Vanaraja

Developed at: Directorate of poultry Research, ICAR, Hyderabad

Characteristics: Dual purpose variety with multi colored feather pattern produce brown shell egg. Body weight (6 wks) 0.65-0.75 Kgs, Adult weight 2-2.2Kg, Annual Egg production: 100-110, Egg weight: 52-59 g



25. Variety: Grampriya

Developed at: Directorate of poultry Research, ICAR, Hyderabad

Characteristics: An ideal egg produced with multi colored feather pattern produce brown shell egg. Body weight (6 wks) 0.4-0.5Kg Adult weight 1.6-1.8 Kg Egg production: 200-230/year, Egg Weight: 57-58 g



26. Variety: Nirbheek

Developed at: Central Avain Research Institute, Izatnagar

Characteristics: Cross of Indian native breed Assel with CARI Red. Birds are active, large in built, pugnacious in nature with high stamina and majestic gait. Body weight (20 wks) Kg Male weight 1.85 Kg, female- 1.35 Kg, Annual Egg production: 198, egg weight- 60 g



27. Variety: Hitcari

Developed at: Central Avain Research Institute, Izatnagar

Characteristics: Cross of Indian native naked neck with CARI Red. The naked neck is devoid of feathers and there is a reduction of 30-40% feathers on the body. Multi colored bird with single peacomb. Body weight (20 wks) Kg Male weight 1.76 Kg, female- 1.32 Kg, Annual Egg production: 200, egg weight- 61 g



28. Variety: Upcari

Developed at: Central Avain Research Institute, Izatnagar

Characteristics: Cross of Indian native breed frizzle with CARI Red. These multi-colored birds have single comb and medium sized body. Presence of frizzle plumage helps in fast heat dissipation due which birds are better adapted to tropical climate. Body weight (20 wks) Kg Male weight 1.69 Kg, female- 1.29 Kg, Annual Egg production: 220, egg weight- 60 g



29. Variety: Debendra

Developed at: Central Avian Research Institute, Izatnagar

Characteristics: Cross of colored synthetic broiler line as male line and Rhode Island Red as female line. Medium size Dual purpose bird, most suitable for Indian customers due to its attractive bright plumage. Body weight (10 wks)- 1.5 Kg Body Wt.(12 weeks)- 1.8 Kg Annual Egg production: 190-200, Egg wt.- 57-60g



30. Variety: Giriraj

Developed at: Karnataka Veterinary , Animal and Fisheries Sciences University, Bidar, Karnataka

Characteristics: Multiple allele cross line with multiple colored plumage, lays brown color shell Body wt.- (8 wks)-1.6-1.7 Kg Adult wt.- Male- 4 Kg Female 3 Kg Annual Egg production: 130-150 Egg wt.- 55-60g



31. Variety: Swarna dhara

Developed at: Karnataka Veterinary , Animal and Fisheries Sciences University, Bidar, Karnataka

Characteristics: High egg production potential along with better growth compared to other local varieties, suitable for mixed or backyard farming. Body weight- (8 wks)- 1.0-1.1Kg Adult weight Male-4 Kgs, Female- 3 Kgs Egg production: 180-200, egg wt- 50-60g



32. Variety: Kalinga Brown

Developed at: Central Poultry Development Organisation, Bhubaneswar

Characteristics: Cross of white leghorn with Rhode Island Red. Color of egg- tinted brown. Birds are single combed, shank, beak and skin are yellow, active, large in built, pugnacious in nature with high stamina to survive under rural condition. Annual egg production: 270 Feed consumed per Kg of egg- 3.76Kg, Body weight(16 wks)- 1.1Kg, Body wt.(72wks)- 1.7Kg



33. Variety: Gramla kshami

Developed at: Kerala Veterinary University, Mannuthy

Characteristics: Plumage colour is whitish brown. Purpose- egg type. Sexual maturity age-160 days, Eggs in 72 wks-180-200, Weight-1.7Kg. Egg weight- 50 gms.



34. Variety: Kaveri

Developed at: Available at CPDO& TI

Characteristics: Egg type rural bird, Multi colored plumage, egg production: 180 per year, adult body weight-1.6Kg, good scavenging bird



35. Variety: Kuroiler

Developed at: Kegg farm, N. Delhi

Characteristics: Multicolored variety, body wt.- 3.5-4 Kg, Age at maturity- 24 wks, Egg production- 150 per year



36. Variety: Rainbow Rooster

Developed at: Indore Research and breeding Farm Pvt. Ltd., Hyderabad

Characteristics: Cross between colored Broiler with barred plumage as male line and RIR as female line. Body weight(6Wks)- 1.2Kg FCR-2.23 Egg production: 180 per year




37. Variety: Shipra

Developed at: Shipra Hatcheries, Patna

Characteristics: Dual purpose strain, Non broody and scavenging. Mixed Plumage colour, weight at 6 weeks 1.2Kg FCR (6 wks) 2.0 Egg production 180 per year Egg colour: Brown







This document is developed by
National Mission Management Unit, DAY-NRLM
with support from Transforming Rural India Foundation (TRIF)



संस्कृतम्
Ministry of Rural Development
Government of India



Technical Bulletin 2

Feeding Management in Poultry Farming

DAY-National Rural Livelihood Mission

A. Introduction

The Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) is a flagship program of Govt. of India, dedicated to eradicating poverty and promoting sustainable livelihoods in rural areas. DAY-NRLM focuses on empowering rural women through the formation of Self-Help Groups (SHGs) and community institutions and is making concerted efforts to augment the livelihoods of SHG women through multiple activities which include farm, farm-allied, and non-farm activities. Livestock is one of the crucial components of these activities. It offers SHG women an opportunity to generate income, achieve self-sufficiency, and strengthen their economic prospects.

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This section introduces backyard poultry, its relevance, feeding management of poultry, types of feeds for poultry etc. With the potential to generate sustainable livelihood, backyard poultry offers an accessible and economically viable opportunity for women to secure their financial independence.

B. Backyard Poultry: A Sustainable Livelihood for Women

Poultry as an important supplementary source of cash income is reared by about 89 percent of rural livestock householders. Poultry farming is widely possible in different agro-climatic environments, as fowls have marked physiological adaptability. It requires small space, and less capital investment, also in poultry farming there is quick return and well-distributed turn-over throughout the year, which makes it remunerative in rural as well as urban areas. Traditional backyard poultry production in India is practiced since time immemorial which was the primary source of animal protein and supplementary income for the downtrodden rural poor and the only source of poultry egg and meat for city dwellers before poultry industrialization. The importance of backyard poultry production has been globally recognized to overcome the worsening problems of poverty, hunger and malnutrition in developing countries. Poultry is one of the fastest-growing segments of the agricultural sector in India today. While the production of crops has been rising at a rate of 1.5–2% per annum, that of eggs and broilers has been rising at a rate of 7-9% per annum. According to Directorate of poultry research per capita availability of eggs is 54, while chicken meat consumption is 2.2 kg against the ICMR recommendation of consumption of 180 eggs and 10.8 kg poultry meat per person per annum.

Backyard poultry production forms the basis for transforming the rural poultry sector from subsistence to a more economically productive base. Also, increased backyard poultry production would result in a positive impact on household food security both in terms of increased dietary intake as well as income generation. Hence, increasing meat and egg production from backyard poultry has been a major concern of Government of India for many years and supported by various programmes to improve backyard poultry production.

C. Benefits of Poultry:

- Lesser initial investment and higher return.
- Requires lesser land and labor.
- High demand for meat as well as eggs.
- Contributes a lot to the rural economy.
- Easy to integrate with agriculture, aquaculture, and other livestock farming.
- Can survive any situation.
- Feed cost is negligible due to better utilization of agricultural byproducts.
- Raising the backyard requires a lesser cost of feed.
- Around 900gm body weight in 100-110 days.
- Substantial supplementary feeding and proper housing ensure better productivity.

D. Utility of Backyard Poultry Farming

Backyard poultry, a traditional system of poultry keeping is a part of livestock rearing practiced by rural folks since time immemorial. Further, these are very active in pest control, provide manure and required for special festivals and traditional ceremonies. Backyard poultry is advantageous as it provides supplementary income in shortest possible time with very minimum capital investment, simple in operation and ensures availability of egg and meat even in remote rural areas. As the local birds are used mostly, they got better adaptability and protect themselves from predators and diseases. Backyard poultry, due to its least demanding nature in terms of infrastructure has been widely accepted by the rural poor. Backyard poultry in India is characterized by small flock size consisting of 5-10 predominantly non-descript birds maintained in extensive system under zero or low input venture. It is characterized by indigenous night shelter, scavenging system with little supplementary feeding and natural hatching of chicks due to this the system auto-regenerates. Mainly local birds are reared although there are specific or specialized indigenous breeds in some areas. These breeds represent a rich source of disease-resistant germplasm. The native chicken varieties adopted in free-range backyard conditions for centuries contribute about 11% of total egg production in India[#]. In most of the cases, eggs produced are for home consumption or for limited trade within the village.

Backyard poultry production plays a vital role in rapid growth of economy. It provides livelihood security and availability of food to the family. Unemployed youth and women can also earn an income through poultry farming. Besides income generation, Rural backyard poultry provides the demand of nutrition supplementation in the form of valuable animal protein through meat and eggs to the rural families. It has also been noticed that the demand for rural backyard poultry is quite high in tribal areas.

SOURCE

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E. Feeding Management of Poultry

- Feeding management is managing the quantity of feed nutrients for their intended purpose.
- This involves development of diets that supply the quantity of available nutrients required by poultry for maintenance, production, performance, and reproduction.
- Help in maintain the growth and uniformity of birds
- Poultry require water, carbohydrate, protein, minerals and vitamins in proper proportion to grow faster, survive and lay more eggs.
- Village birds scavenge around household compound feeding on available feed resources such as insects, earth worms, vermin, greens, residue from harvest, maggots, grains meat, feathers etc. This meets their requirements for vitamins and minerals, partly for energy but not for protein.
- Allow birds early in the morning for scavenging and continue until late in the evening to ensure that birds eat balanced pickings.
- Provide any supplementary feed that will contribute to the requirement for energy, protein and other micronutrients every day.

F. Types of Feed



Crumbles

- A. Crumbles feed is pelleted and then broken down into a smaller size for small beak.
- B. As the process uses heat treatment, this increases the digestibility of nutrients for younger birds. Feeds such as the Chick Starter and Pullet Grower are crumbles.
- C. Feed wastage and loss is lesser than mash feed.



Pellet

- A. Pellet feed is made by raw materials by adding heat and water in the form of steam.
- B. At finisher age, birds are given pelleted feed.
- C. Feed wastage and loss is lowest.



Mash

- A. Use for baby chick.
- B. Form of a complete feed that is finely ground and mixed so that birds cannot easily separate the feed ingredients.
- C. Mash diet gives greater unification of growth and less death loss and is more economical.
- D. More chances of feed wastage and loss.

G. Major Components of Poultry Feed

To make the proper and balanced poultry feed, the following ingredients should be as per nutritional formula of required feeds.

- **Protein:** Most effective for body weight gain and increase egg productions. Ex-Soya Bean meal, Mustard Oil cake, ground nut cake, meat meal, bone meal, Rapseed etc.
- **Carbohydrate:** Provides energy and heat to the body of a bird. Ex-Maize, Corn, wheat, Sorghum, Jowar, Bajra etc.
- **Minerals:** Add in feed for bony growth of birds and to support formation of egg shell. Ex-Macro-mineral mixtures, mineral mixture etc.
- **Fats:** Provide concentrated energy, improves the physical characteristic of feed, improves feed palatability, also help in mixing of all ingredients. Ex-Soyabean oil, corn oil, sunflower oil, etc.
- **Water:** Birds need adequate water consumption for body growth, better egg production and prevent for mounding of laying flocks.
- **Vitamins:** Requires all vitamins except vitamin C. Vitamins helps in normal growth, reproduction, good eye, bone development, egg shell formation etc.

H. How to prepare poultry feed

A. Low-cost backyard Poultry feed

Sl. No.	Particulars	Starter feed (Kg)	Finisher feed (Kg)
1	Carbohydrate- Corn (Maize)	58	48
2	Carbohydrate (Rice Husk)	14.6	19.1
3	Carbohydrate (Broken Rice)	0	10
4	Protein-Soyabean Meal (DOC)	25	13
5	Digestive Enzyme	0.01	0.01
6	Calcium-Limestone Powder (LSP)	1.8	9.6
7	Vitamin premix	0.04	0.03
8	Salt	0.33	0.33
9	Toxin binder	0.11	0.11
10	Soda	0.1	0.1
11	Coccistat	0.1	0.1
	Total	100 kg	100 kg

NB: Don't forget to add Coccidiostat as in backyard poultry, chance of coccidiosis is high.

Feeding to Desi Birds

- Plenty of well chopped green to be provide.
- Provide vegetables, wastages of home.
- Provide place to eat feed resources such as insects, earth worms, vermin, greens, residue from harvest, maggots, grains meat, feathers etc.
- Provide 80-200 g low-cost feed depending on body weight of desi birds.
- Provide broken rice/rice manually.



Feeding to Improved Backyard Birds

- First day- Give grinding Maize as food.
- Starter feed till: Till 30 days of old: Higher metabolic energy.
- Finisher Feed: From 31 to date of sale: Contains highest metabolic energy and lowest crude protein.
- Also provide 15% of requirement by well chopped green vegetables.



I. Process of feeding the birds

- Give Starter feed at chick's trays for 2 days.
- Give starter feed till 10-12 days including the brooding period to develop the organs properly.
- Ensure finisher after 30 days or after achieving 300 g of body weight.
- Give feed at proper size of feeders. Ex- Chicks trays, chick feeder of 2.5 kg capacity till 30 days, 8-10 kg capacity feeders after 900-1100 kg body weight.
- Give the feeds to birds as per feed schedule only. Excess feeding will decrease the egg production.
- Place drinkers near to feeder to minimize the loss of energy.
- Give feed at daily washed and cleaned feeders only to minimize the risk of diseases.
- Check the moisture of feed, taste of feed before giving to birds.
- Ensure light in poultry sheds for proper feeding.
- Check temperature of shed. In extreme temperature don't provide enough feed to avoid mortality.
- Never provide feed to birds unless ensure water in drinkers.
- Check the size of feed particles. Mash feed with more dusts causes loss of feed and longer size pellets also hampers the digestibility of birds.
- Provide cross ventilation for better feed intake.
- Ensure well chopped green vegetables of birds.
- Keep the feeders and drinkers in line. Keep one drinker in between two feeders.
- Provide one feeder and one drinker out of 40-50 birds.




J. Storage of Poultry feed

- Keep in dry areas only and protect the feed from rats, MICE or other insects.
- Feed should never be stored directly on the ground, concrete, or metal as those surfaces draw moisture and may cause mold growth.
- Keep the feed bags above the floor in tools or woods.
- Never store the feed for longer period. Better not to store beyond 30 days.
- Bring feed from factory outlet or other reputed dealer only.
- After opening the bags and using, tightly close the opening of the bags.



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National Mission Management Unit, DAY-NRLM
with support from Transforming Rural India Foundation (TRIF)



Ministry of Rural Development
Government of India



Technical Bulletin 3

Health Management of Backyard Poultry

DAY-National Rural Livelihood Mission

A. Introduction

The Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) is a flagship program of Govt. of India, dedicated to eradicating poverty and promoting sustainable livelihoods in rural areas. DAY-NRLM focuses on empowering rural women through the formation of Self-Help Groups (SHGs) and community institutions and is making concerted efforts to augment the livelihoods of SHG women through multiple activities which include farm, farm-allied, and non-farm activities. Livestock is one of the crucial components of these activities. It offers SHG women an opportunity to generate income, achieve self-sufficiency, and strengthen their economic prospects.

In India, amidst various livestock farming sectors, back yard poultry has emerged as a lucrative and sustainable venture, catering to the growing demand for quality meat and egg. With its adaptability to diverse environments and relatively low maintenance requirements, poultry farming presents an attractive opportunity for SHG women. This bulletin aims to equip farmers with the knowledge necessary for efficient and profitable poultry farming.

The Technical Bulletin has been structured into three parts to serve as a comprehensive resource for individuals and organizations seeking to enhance their knowledge and skills in poultry farming. Each part offers specific insights and guidance, covering various aspects of poultry rearing, from its significance to the selection of breeds, feeding, health & disease management, and general management practices including shed construction. By dividing the information into these distinct sections, the Technical Bulletin aims to provide a systematic and accessible resource that equips readers with the knowledge and skills necessary for successful and sustainable backyard poultry. These three parts collectively offer a valuable reference for achieving success in the field.

This section introduces backyard poultry, its relevance, the criterion for selection of healthy poultry, common diseases in poultry etc. With the potential to generate sustainable livelihood, backyard poultry offer an accessible and economically viable opportunity for women to secure their financial independence.

B. Backyard Poultry: A Sustainable Livelihood for Women

Poultry as an important supplementary source of cash income is reared by about 89 percent of rural livestock householders. Poultry farming is widely possible in different agro-climatic environments, as fowls have marked physiological adaptability. It requires small space, and less capital investment, also in poultry farming there is quick return and well-distributed turn-over throughout the year, which makes it remunerative in rural as well as urban areas. Traditional backyard poultry production in India is practiced since time immemorial which was the primary source of animal protein and supplementary income for the downtrodden rural poor and the only source of poultry egg and meat for city dwellers before poultry industrialization. The importance of backyard poultry production has been globally recognized to overcome the worsening problems of poverty, hunger and malnutrition in developing countries. Poultry is one of the fastest-growing segments of the agricultural sector in India today. While the production of crops has been rising at a rate of 1.5–2% per annum, that of eggs and broilers has been rising at a rate of 7-9% per annum. According to Directorate of poultry research per capita availability of eggs is 54, while chicken meat consumption is 2.2 kg against the ICMR recommendation of consumption of 180 eggs and 10.8 kg poultry meat per person per annum.

Backyard poultry production forms the basis for transforming the rural poultry sector from subsistence to a more economically productive base. Also, increased backyard poultry production would result in a positive impact on household food security both in terms of increased dietary intake as well as income generation. Hence, increasing meat and egg production from backyard poultry has been a major concern of Government of India for many years and supported by various programmes to improve backyard poultry production.

C. Benefits of Poultry:

- Lesser initial investment and higher return.
- Requires lesser land and labor.
- High demand for meat as well as eggs.
- contributes a lot to the rural economy.
- Easy to integrate with agriculture, aquaculture, and other livestock farming.
- Can survive any situation.
- Feed cost is negligible due to better utilization of agricultural byproducts.
- raising the backyard requires a lesser cost of feed.
- Around 900gm body weight in 100-110 days.
- Substantial supplementary feeding and proper housing ensure better productivity.

D. Utility of Backyard Poultry Farming

Backyard poultry, a traditional system of poultry keeping is a part of livestock rearing practiced by rural folks since time immemorial. Further, these are very active in pest control, provide manure and required for special festivals and traditional ceremonies. Backyard poultry is advantageous as it provides supplementary income in shortest possible time with very minimum capital investment, simple in operation and ensures availability of egg and meat even in remote rural areas. As the local birds are used mostly, they got better adaptability and protect themselves from predators and diseases. Backyard poultry, due to its least demanding nature in terms of infrastructure has been widely accepted by the rural poor. Backyard poultry in India is characterized by small flock size consisting of 5-10 predominantly non-descript birds maintained in extensive system under zero or low input venture. It is characterized by indigenous night shelter, scavenging system with little supplementary feeding and natural hatching of chicks due to this the system auto-regenerates. Mainly local birds are reared although there are specific or specialized indigenous breeds in some areas. These breeds represent a rich source of disease-resistant germplasm. The native chicken varieties adopted in free-range backyard conditions for centuries contribute about 11% of total egg production in India[#]. In most of the cases, eggs produced are for home consumption or for limited trade within the village.

Backyard poultry production plays a vital role in rapid growth of economy. It provides livelihood security and availability of food to the family. Unemployed youth and women can also earn an income through poultry farming. Besides income generation, Rural backyard poultry provides the demand of nutrition supplementation in the form of valuable animal protein through meat and eggs to the rural families. It has also been noticed that the demand for rural backyard poultry is quite high in tribal areas.

SOURCE

[#] Journal of Entomology and Zoology Studies 2020; 8(2):1411-1415

E. Criterion for Selection of Chicks

It is extremely important for a poultry farmer is to learn how to detect unhealthy or sick birds, so that s/he can immediately take right action / precaution. First action would be isolate sick bird from the flock and then initiate treatment. Tips of identifying sick birds from healthy flock are given in the below mentioned table:

Healthy Birds	Sick / Unhealthy Birds
Alert and on guard	Tired and lifeless
Bright eyes and comb	Dull eyes and combs
Smooth and neat feathers	Ruffled and loose feathers
Walk, run, stand and scratch continuously	Sit and lie down
Eat and drink normally	Eat and drink less
Lay eggs normally	Stop laying eggs
Soft compact droppings	Wet / loose droppings with worm/blood/diarrhoea
Breath quietly	Cough, sneeze and breath noisily and may have nasal discharge

Careful management can reduce disease occurrence in a farm. Following measure should be taken for proper healthcare management at Breeding Farm:

- Always provide clean water to birds in a clean vessel / drinker
- Supplementary feed should be kept in dry and clean place
- Wash feeder every day in clean water, allow it to dry and then give feed
- Clean shelter everyday and keep it dry.
- Apply lime in shelter floor and wall
- Culling of thin birds from the flock, which are susceptible to diseases and can transmit
- Don't keep other species of birds like ducks, guinea fowls, turkey in the breeding farm
- Deworming of birds before 12-15 days before vaccination
- Vaccinate birds as per schedule

F. Common Diseases in Poultry

a. Ranikhet (Newcastle Disease)

It is highly infectious disease with 80-100% mortality rate. It is caused by virus. The first symptoms usually observed in young birds are sneezing, gasping and often droopiness. Among growing birds and in adults, sudden deaths occur in a few instances, and are followed by a number of birds showing respiratory symptoms. These symptoms are accompanied by diarrhoea, characterize by the passing of a watery stool with an offensive smell. There is profuse salivation. The saliva often accumulates in the mouth and obstructs respiration, which results in the production of gurgling disused birds may be soft-shelled and deformed. No definite treatment for this disease is known.

One day old chicks should be vaccinated by dropping the antiviral vaccine in the eyes and nostrils. After about two months, the chicks should be properly vaccinated and it is advisable to vaccinate the adult birds at least once a year. The suffering birds should be immediately isolated from the flock.



b. Pullorum disease / Fowl typhoid

Affected birds may exhibit a shrill cry when voiding excreta, which is white or greenish brown. Reduction in egg production, fertility and hatchability.

No treatment is likely to effect complete elimination of carrier from infected birds. No vaccination is practised and all positive birds may be disposed-off by slaughter.

Chicks hatched from infected egg, moribund or dead chick may be seen in the incubator.



c. Fowl Pox:

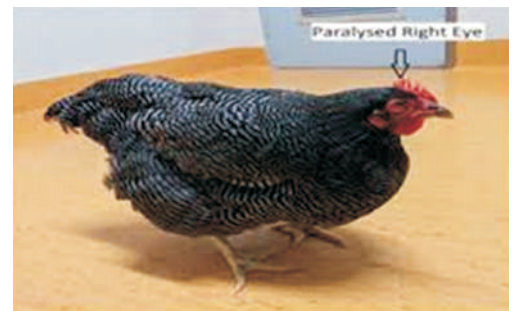
It is a viral infection and is very contagious. Young birds are more susceptible to this disease. The symptoms of this disease are wart-like protuberance on comb and wattles. The eyes and nostrils often become covered by a yellow, cheesy discharge which sometimes causes respiratory trouble. There is no effective treatment for this disease. However, the skin of the suffering bird should be washed with dettol and silver nitrate or a saturated solution of picric acid can be applied on the affected part. For prevention, those chicks, above four weeks of age should be vaccinated in the thigh with "pigeon pox vaccine". The 12-16 weeks old chicks should be vaccinated with "fowl pox vaccine" on the wings. On the sudden outbreak of this disease all the affected birds should be immediately isolated.



d. Tick Fever or Spirochaetosis:

It is a highly fatal disease caused by an organism called *Borrelia gallinarum*. The fowl tick (*Argus persicus*) is the transmitting agent from one bird to other. The common symptoms are rise in temperature and a subsequent sudden drop below normal, loss of appetite, increased thirst, profuse loose discharge etc. In advanced condition, paralysis of legs and wings occurs and the birds die within 24-48 hours of the appearance of these symptoms. Mortality rate is 70–100%.

For prevention, the material used for the construction of house should be tick free. The body of newly purchased birds should be rubbed with gamaxine or BHC powder.



e. Tuberculosis:

It is an infectious disease caused by the bacteria *Mycobacterium tuberculosis*. The symptoms are loss of body muscles. At the acute stage, paralysis of legs occurs. There is no treatment and the affected bird should be isolated on detection by "tuberculin test".



f. Infectious Coryza:

This disease is caused by *Haemophils gallinerum*. The symptoms are inflammation of the head sinuses and respiratory passage leading to respiratory problem. The birds show inactivity, coughing and sneezing. There is neither any treatment nor any effective preventive medicine for this disease. The disease can be checked by improving the sanitary conditions and removing dampness.



G. Parasites

(i) Internal parasites

a. Round Worm:

It is an internal helminthes parasite found in the intestine (*Ascaridia gallinerum*) and caecum (*R. gallinerum*) in birds. The symptoms are slow growth of chickens, loss of appetite, general weakness and occasional bloody diarrhoea. The affected bird should be fed orally 0.5 gram of phenothiazine. For chicks, the dosage should be reduced to half. As a preventive measure, tobacco dust should be mixed with the feed mesh in a ratio of 1: 50 and should be given to the birds for about a month.

b. Tape Worm:

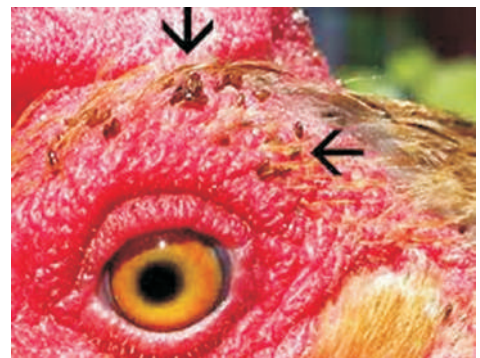
An internal helminth parasite found in the intestine of the birds. Symptoms due to its infection are anemia, weakness of the legs, lameness and occasional diarrhoea. It is fatal in young chicks but the adults survive with weak health. Treatment can be done by adding wormicide in drinking water. Preventive measures are general improvement in sanitary conditions and regular spraying of insecticides on the droppings.



(ii) External Parasites:

They include Lice, ticks, mites, and fleas etc. which are a regular source of annoyance to the birds and cause loss of the poultry in an indirect way. The preventive measures for general control of these parasites are regular spraying of mixture of 150 gram Potassium Permanganate and 280 ml formalin for every one thousand cu ft room volume, dusting* birds with sodium fluoride, and a mixture of one part tobacco powder, one part sulphur and ten parts wood ash. For Dipping of birds 450 gram wettable sulfur in 40 ltr of water may be used.

The birds should be dusted or dipped and houses fumigated as soon as there is indication of ectoparasites. Dipping should be avoided on rainy days. Head dipping has to be avoided.



H. Vaccination

Vaccination can prevent many poultry diseases. Follow a suitable vaccination program or only buy appropriately vaccinated stock. You can request vaccination certificates from your supplier when purchasing chicks or pullets.

* Dusting of poultry bird: The bird is placed on a flat surface, preferably in a large shallow pan to prevent loss of powder. It is held by the wings or legs with one hand while with the other hand small pinches of the dust are placed on the skin as follows: one on the fluff below the vent, one on the head, one on the neck, one on the breast, one on each thigh, and one on the underside of each wing.

S. No.	Age	Particulars
1	7th day	Lasota vaccination against Ranikhet disease
2	14th day	Lasota vaccination against Ranikhet disease
3	8th week	Fowl pox vaccination
4	9th week	Vaccination against Ranikhet disease
5	18th week	Vaccination against Ranikhet disease
6	Desi birds (Adult)	Lasota mixed with water and given to desi birds once in every 3 months. One week before Lasota vaccination deworming is to be carried out.

Vaccination Programme for Layer type Chicken

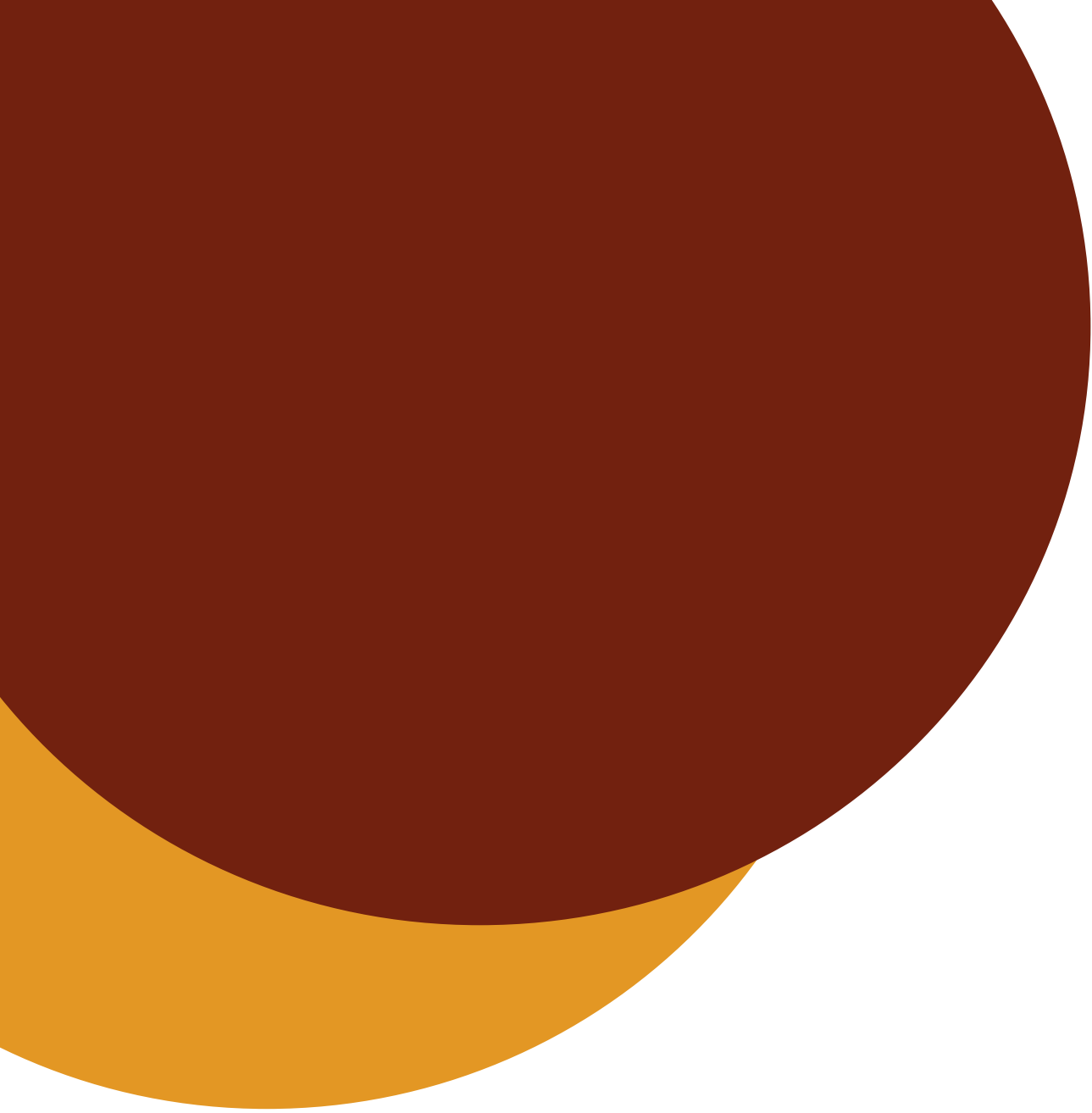
Age	Disease	Vaccine	Route
1 day	Marek's	HVT vaccine	I/M
5-7 days	Ranikhet Disease (RD)	Lasota/F	Occulonasal
10-14 days	Infectious BURSAL Disease (IBD)	IBD Live	Drinking water
24-28 days	IBD	IBD Live	Drinking water
8th week	RD	R2B/RDVK	S/C
16-18 week	RD	Killed/Live	S/C

For Breeders of Poultry, when Vaccinating

- Always follow the instructions on the label, including storage conditions
- Use disposable syringes and needles
- Discard all unused vaccines, syringes and needles in a proper manner
- Be clean, but never use detergents or disinfectants near vaccination equipment. Do not disinfect skin before vaccinating with fowl pox or Marek's HVT vaccine, as this will kill the vaccine virus.

I. Deworming

Birds should be dewormed, starting one week before R2B/RDVK vaccination and repeated at 3-week intervals, to give 4 dewormings before housing at 18 weeks age. Piperazine compounds, albendazole, mebendazole etc. can be used against roundworms. Against tapeworms, Niclosamide, Praziquintel, Albendazole can be used.



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