



**Technical Manual Handbook on
Desi Poultry Breeding Farm**



Technical Manual Handbook on Desi Poultry Breeding Farm Enterprise

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CONCEPT OF BREEDING FARM WITH *DESI* / INDIGENOUS POULTRY

Backyard Poultry (BYP) is very common production system in rural areas as 70 % Of rural households in the country poses poultry. 84 % of birds found in the backyard production system in India are *desi*/ indigenous. It provides supplementary income to rural / tribal households, particularly to women as they are mostly handle poultry in the backyard.

Breeding Farm with *Desi* / Indigenous Poultry is a free-range system of rearing breeding stock in small scale. This concept has been developed by Krishi Vigyan Kendra (KVK) at Namakkal district of Tamil Nadu and then customized through experiences from different locations in many states by **NGO partners of Revitalizing Rainfed Agriculture (RRA) Network**. As a small scale enterprise, **breeding farm maintains 50 hens and 10 cooks** (number can be increased or decreased as per availability of resources) of *desi* / indigenous birds for breeding farm. Adopting scientific and improved package of practices, this breeding farm has **potential to produce around 1000 chicks annually**. Having higher demand and better price at local markets in rural areas, **potential gross income of such breeding farm is around Rs.1,00,000/-** by selling of chicks, growers and adult poultry in nearby villages.





PURPOSE OF BREEDING FARM

Even though, desi / indigenous birds are very prominent in rural India, there are no support services to improve backyard poultry production system. There is no organized system of supply of chicks of Desi poultry at grass root level. Main purpose of promoting Breeding Farm enterprise is to **develop decentralized breeding unit of desi / indigenous poultry and creating supply chain of chicks / growers on the regular basis**. Initially one Breeding Farm can **serve 100-200 households** from cluster of villages for supplying of chicks/growers of desi poultry and increase its catchment as per demand.

Selected through a process may be in SHGs meeting / village meeting (organization should to finalize; rather community should finalize entrepreneur).

The aim of Breeding Farm Enterprise is to rear 50 hens and 10 cocks to produce around 1000 Chicks annually.

Criteria for Selection of Breeding Farm Entrepreneur

- I (one) dedicated person from the household will be available full time throughout the year to look after day to day operation in Breeding Farm
- Have prior experience in Desi poultry Rearing (more than 10-15 Hens)
- Ability to put own investment in development of Breeding Farm
- Have 2000 sq mt of land near house for establishing Breeding Farm (preferably having plantation to provide natural shed in the enclosure)
- Ability to keep records / account etc
- Agreed to develop all package of practices in Breeding Farm
- S/he should be member of SGHs / Common Interest group / Poultry rearers network / association (part of any local institution)

BASIC INFRASTRUCTURE AND PACKAGE OF PRACTICES (POPs) FOR ESTABLISHING BREEDING FARM ENTERPRISE

In order to maintain breeding stock of 50 hens and 10 cocks along with chicks and growers, following basic infrastructures are required at the Breeding Farm.

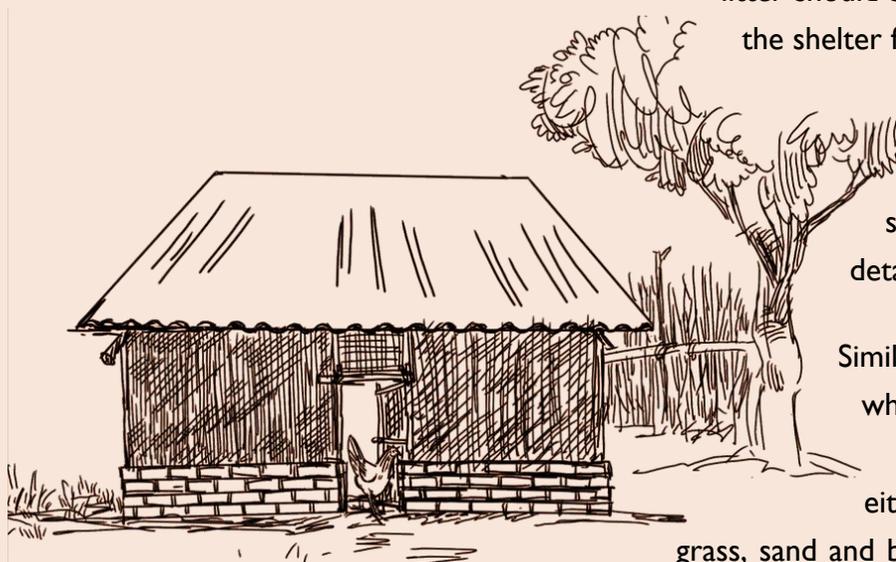
- I. **FORAGING AREAS** – Since Breeding Farm Enterprise promote foraging / free range system of production system, an **area of 2000 sq mt (0.5 ac) land** for developing infrastructure and forage based feed resources. This land should essentially be in the backyard of the entrepreneur's house to provide greater attention to the birds. In case of inadequacy of land, Entrepreneur must reduce the number of breeding stock while such number can be increased gradually if more land is available at the backyard of the entrepreneur. Foraging areas should have **lots of**



plantation. This will provide natural sheds and help in reducing outside temperature particularly during summer season. Besides plantation, **few temporary thatched rest sheds (4-5 in numbers)** spread over foraging areas are required to provide additional resting place for birds during day time. **Provision of water inside or near the foraging area is very crucial.**

2. **FENCING** – Entire foraging areas, i.e., 2000 sq mt has to be enclosed by providing fencing in the boundary. Birds are prone to predation, particularly in forest fringe areas, therefore, fencing will protect birds. In long run, live fencing will be required with plants like *Gliricidea*, *pongamea*, etc grown in the boundary. Along with live fencing, along with low cost materials like fishnet / *kabutar jaali* or bamboo sticks / palm leaves which ever available locally to prevent predators to come inside the foraging area. Care should be taken that there is no open space in the fence by which predator like cats come inside.

3. **SHELTER** – Clean shelter is pre-requisite to the breeding farm to reduce risks of loss of birds due to bad weather, predators, and theft. Inside the shelter, partitions are made to keep different types of birds. Rice straw / rice husk should be provided in the floor as litter. This litter should be changed in every month. Liming should be done before putting litter in the shelter floor.



One section (confined inside the shelter) should be kept for mother hen and chicks in order to give greater attention to chicks at their early stage and protect them from any kind of injury from other birds (explain in detail in the section – chick management).

Similarly another section inside the shelter should be used as hatching place which should be covered by putting cloths / green nets to provide isolation to hens which are hatching their eggs. 15-20 baskets / nets are placed either on the ground or hanging as hatching nests in this section. Some grass, sand and bedding materials should be placed in the baskets / nests. Feed and clean

water should be provided nearer to hatching birds. This section will be closed so that hatching birds are not disturbed by the other birds in the shelter. After hatching, these nests / baskets should be cleaned and dried before reuse by other birds.

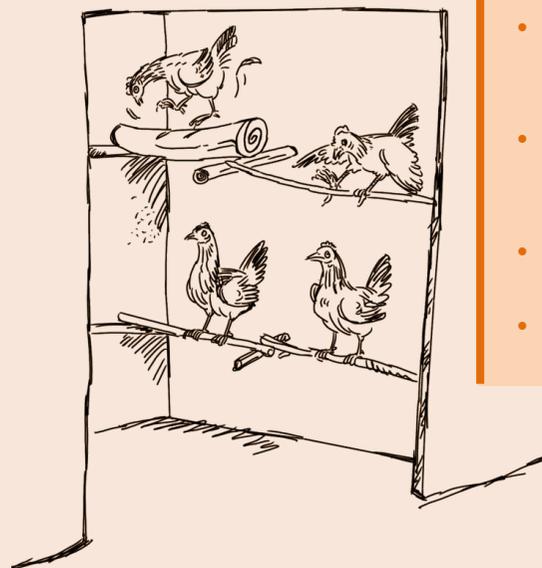


collect eggs easily. This also reduces spoilage and loss of eggs.

4th section is the place where other birds. In this section of the shelter, perches should be made so that birds can take rest on this during night. Growers, cocks, and dry hens should be kept in this place.

The shelter, perches, egg shelf, hatching basket / nests should thoroughly clean on regular basis. Liming of walls, perches, doors should be done twice in a year and always after serious outbreaks of diseases.

3rd Section inside the shelter would be dedicated for laying eggs by hens. 12-15 egg laying boxes / baskets / shelf made of bricks with tin sheet placed over shelves will be useful. This will allow hens to come and lay eggs in specific areas and entrepreneur can

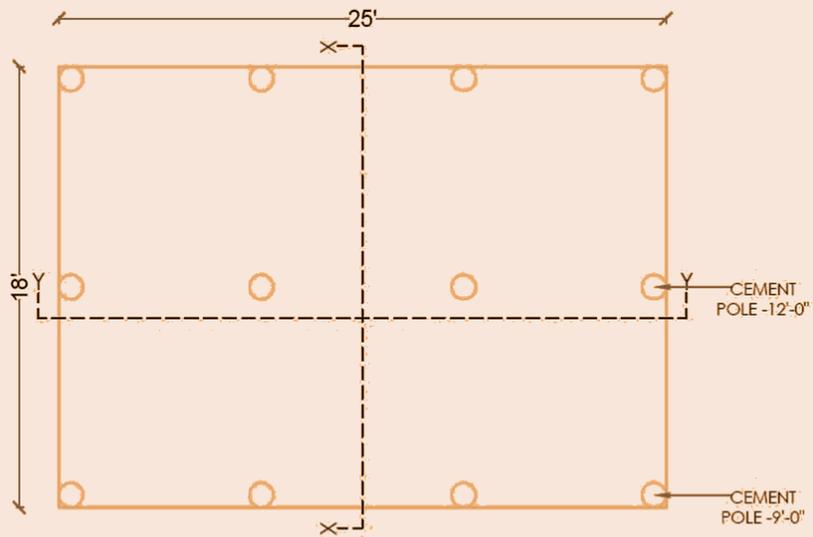


Tips for construction of Shelter

- Use cheap but durable local materials like, bamboo, wood, reeds, thatch grass, clay bricks combined with cement.
- Use plastic coated wire mesh as wall which provides ventilation & Sunlight
- Floor may be concrete (cement, sand, mud mix) and cow dung layer which is covered with dry straw and rice husk.
- Keep reed grass / thatched grass cover on the roof of tin sheets.
- Place perches in adequate numbers so that growers and adult birds roost in the night
- Put partitions to isolate chicks and mother, hatching nests and egg laying shelves.
- Remove bushes, Grasses near shelter to reduce predation
- There should not be any whole in the shelter.

TECHNICAL SPECIFICATION

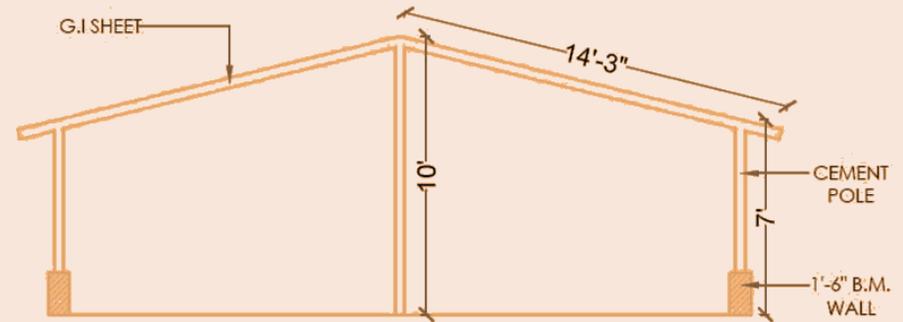
A. Design and Estimate of Shelter of Breeding Farm



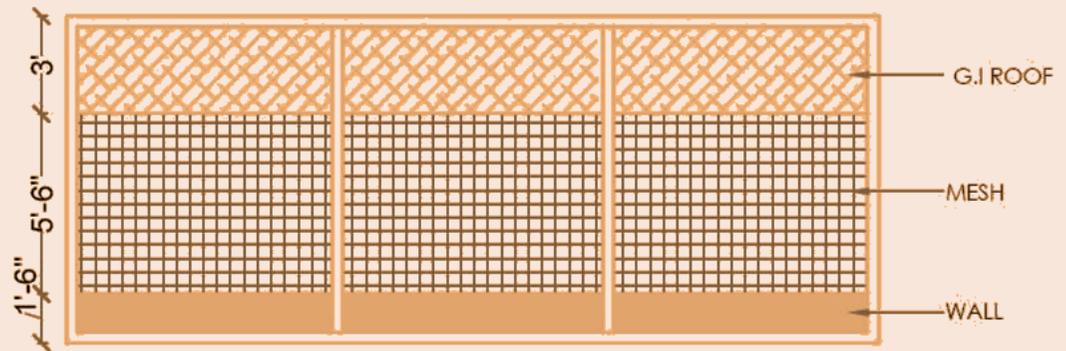
PLAN

MATERIAL REQUIRED

1. Cement Poles	12'	-	4 Nos.
2. Cement Poles	9'	-	8 Nos.
3. Iron Wire Mesh		-	602 Sft.
4. Zinc Sheet Corrugated		-	700 Sft.
5. Door	3'	-	1 No.



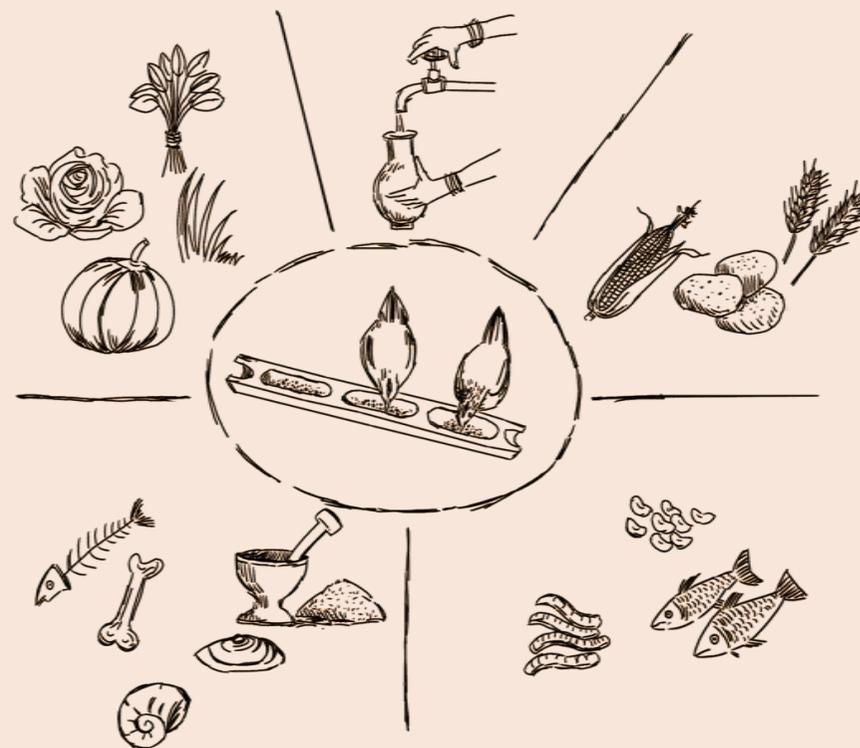
SECTION AT X-X



SECTION AT Y-Y

BREEDING FARM SHELTER									
ESTIMATE									
Size 25' - 0" x 18' - 0"									
S.No	Description	No		L	B	D	Qty	Rate / Unit	Amount (Rs)
1	2	3	4	5	6	7	8	9	10
1.	Brick masonry with local available bricks in cement mortar (1:8) prop.	1x1	1	86'-0"	0'-9"	1'-6"	96.75 Cft or 2.73 Cum	2014.00/ 1cum	5,498
2.	Cement Poles 12'-0" HT	1x4	4	—	—	—	4 Nos.	600.00 / each	2,400
3.	Cement Poles 9'-0" HT	1x8	8	—	—	—	8 Nos.	500.00 / each	4,000
4.	Zink Sheet 22 G Corrugated	1x1	1	25'-0"	28'-0"		700 Sft.	16.00 / Sft.	11,200
5.	Door with locally Available Bamboos	1x1	1	3'-0"	—	6'-0"	18 Sft.	50.00 / Sft.	900
6.	Iron Mesh	1x1	1	86'-0"	—	7'-0"	602 Sft	Rs. 10.00	6,020
								Total	30,018

4. **FORAGING FEED RESOURCE DEVELOPMENT** – In the Breeding Farm, *desi* / indigenous birds gets their food by foraging / scavenging for insects and waste grains scattered around foraging area, food left over (kitchen waste), green vegetable etc. In order to maximize profit, Breeding Farm Enterprise should developed forage / scavenging Feed resources within the forage areas. Poultry needs four types of feed, namely, energy-rich, protein-rich, mineral-rich and vitamins.



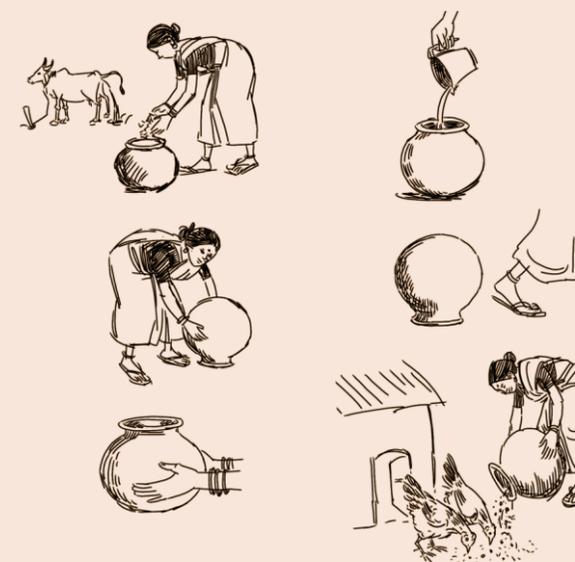
SI No	Feed types	Usefulness	Sources
1	Energy Rich	Maintain body temperature and birds movement	Rice, wheat, maize and their by products(bran), Sorgham, Bajra, ragi, yam meal, banana meal, root & tubers etc
2	Protein Rich	Growth, egg production and keep birds healthy	Maggot, termites, insects, worms, meat scraps, fish scraps, fish meal, leaves of cassava (<i>Manihot esculenta</i>), subabool (<i>Leucaena leucocephala</i>), peas, beans, oil cakes, palm and coconut kernel etc
3	Mineral rich	Bone & eggshell formation and health birds	Snail shells, bone meals, burned eggshells
4	Vitamin rich	Growth, egg production, hatchability increased	Green fodder like drumstick leaves, vegetables, Azolla, sunlight, green grass

In order to develop foraging / scavenging based feed resources following practices are adopted in the Breeding Farm.

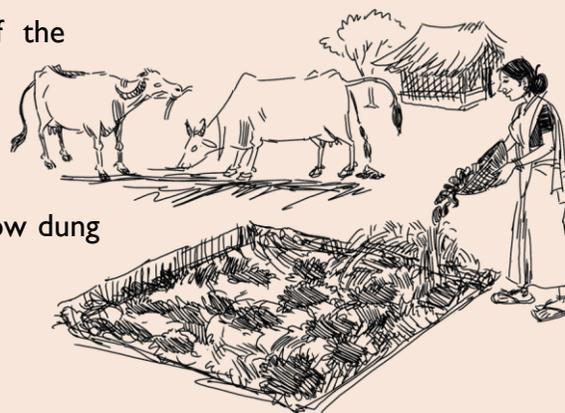
- **GROWING MAGGOTS** – Maggots and Termites are excellent but cheap sources of protein the foraging based poultry production system. It is better to give maggot and termites to chicks, as they need more protein during growing stage. Cow manure, kitchen waste, other farm wastes are mixed in a open pot. Fill the 1/3 pot with water. Flies will lay their eggs in the mixture and the maggot will feed on it. Leave the pot open during daytime and closed during the night. After 5-10 days, depending on temperature, when maggots are ready then pour more water in the pot. Give these maggots to chicks separately. In a breeding farm, 25-30 such pots can be maintained near the fencing and give these maggots to mother hens and chicks.



- **GROWING TERMITES** – Take a pot and fill with cow dung and straw. Sprinkle little water on it. Up the pot upside down on sandy soil. Keep the pot for 2-3 days, termites will grow. Allow poultry to feed termites. 20-25 such pots should be maintained by breeding farm to provide high protein termites to the birds.



- **COW DUNG PITS** – Select corners of the foraging boundary to dig few cow dung pits (3-4) for foraging by birds. These are perfect scavenging ground for birds. Care should be taken that for maintaining hygiene near the cow dung pit particularly during monsoon.



- **GROWING AZOLLA** – Azolla is rich in protein, vitamins and growth promoter intermediaries and minerals like calcium, phosphorus etc. It is easily digestible and owing to high protein and low lignin content. Cultivating Azolla is easy and economical for breeding farm. It can grow well if temperature is between 35°C – 38°C with assured water supply. The following 7 Steps should be followed for Azolla preparation:



- **Step 1 :** Prepare a bed of 6ft X4ftX1.5 ft with silpauline sheet or use a cement tank
- **Step 2 :** Spread clay/ loam/red soil/black soil/ any field soil (free of pathogens) for a height 2-5 inch. (around 50 kg of soil)
- **Step 3 :** Fill water in the cement tank / bed (above the soil) for a height of one feet. It was maintained throughout the growth period of the azolla. If water level was reduced by evaporation or any other factors small quantity of water should be added to maintained the level.
- **Step 4 :** 5-7 kg of fresh cow dung (one day old) was mixed with water and poured it inside of the cement tank.
- **Step 5 :** Mix 100 g of Single super phosphate and 50 g of potash with water in the tank. (Instead of SSP, rock phosphate or press mud can also be used)
- **Step 6 :** Sow fresh azolla of 500 g seed culture over the stagnating water. (for 1 sq.m -300 g of seed azolla was recommended)
- **Step 7 :** Azolla will multiply within 7-10 days, it spread and cover the upper surface like a mat. Harvest can be done from tenth day onwards.

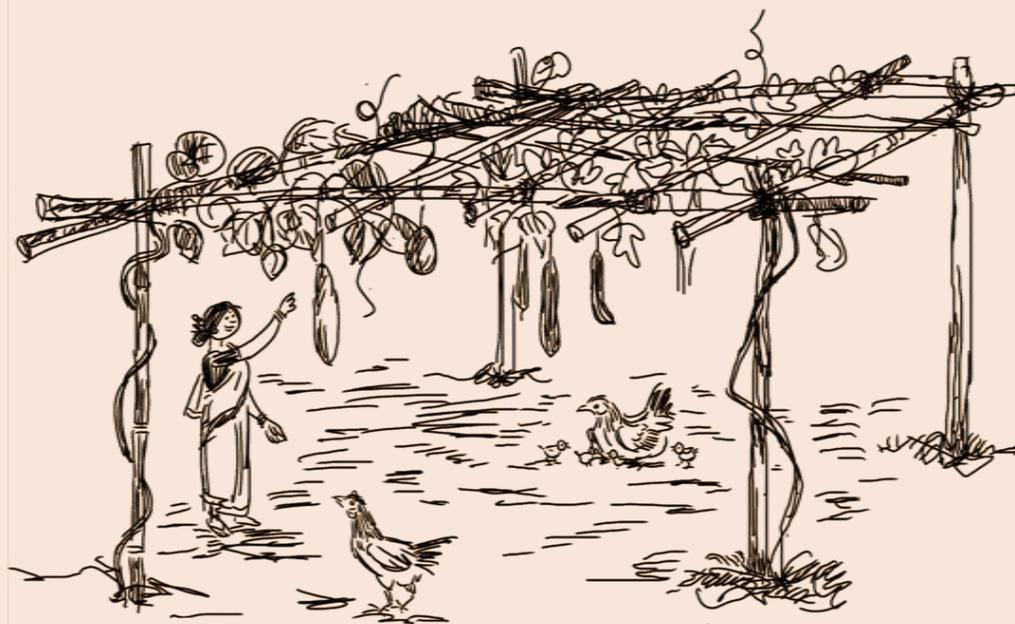
- **CULTIVATION OF GRAINS** – In order to reduce feed cost, entrepreneur should cultivate grains like Maize, Jowar, Bajra, Ragi inside the breeding farm as well as in the agricultural land. 12-15 quintals grain will be required annually to the breeding farm to prepare feed mix.



- **CULTIVATION OF VEGETABLES** – One part of foraging place should be grown with creepers type vegetables. Trellis should be made by Bamboo and polymer ropes for vegetables to grow. This will also give some shed to the birds in day time. Vegetable grown in the breeding farm foraging area will be useful for family nutrition as well as can provide vitamins required for poultry. Around 300 sq mt of the breeding farm foraging area can be used for vegetable cultivation.

- **CULTIVATION OF MEDICINAL PLANTS** – In the Breeding Farm, few medicinal plants are required to keep birds healthy. 10 such medicinal plants will be useful. Some of them are listed in the annexure.

- **CULTIVATION OF FODDER PLANTS** – As mentioned earlier, Breeding farms should have good plantation to keep shed during day time. Some fodder plants, like Drum Stock, Neem, Subabool etc will be very useful.

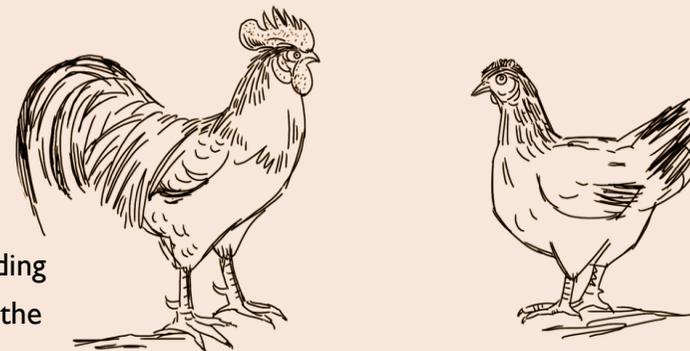




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REARING PRACTICES

1. **SELECTION OF BIRDS AND BREEDS** – In a breeding farm, entrepreneur either decide to increase flock from her / his own stock or purchase good quality birds through proper section (take care of bio-security of purchased birds). If new birds are bought, then keep separately either in basket or in separate shelter for first two weeks. It will be important to have Hen: Cock ration around 10:1 in the breeding population. Starting with healthy birds will reduce lots of disease related issues in the breeding farm.



2. **EGG LAYING** – In the Breeding Farm, entrepreneur must ensure that 1/3rd of hens are laying eggs (except summer season). Nests should be provided to the birds to lay eggs.



These nests should be inside the shelter. For laying eggs, entrepreneur should provide battery of nests / shelves where more hens can lay eggs at a time.

Nests may be made of local materials, like bamboo basket, wooden shelves, broken earthen pots etc. 15-20 such nests should be there in a shelter of the breeding farm.

Tips for Selection of Birds for Breeding Farm

- Clean and shiny feathers
- Clean and dry beak and nostrils
- Agile and Lively behavior
- Check whether hens are in lay
- Strait legs and toes, with no signs of scaly legs

3. **HATCHING** – For brooding / hatching, hens need isolated separate nests placed in quiet and dark place to prevent people and other birds from disturbing brooding/hatching hens. To make nests for brooding / hatching, use bamboo basket / clay pots / wooden box filled with sand mixed with ashes up to 1/3rd of the depth. Put clean and soft nesting materials like hay / straw on the top up to 2/3rd of the depth and then place the eggs in the nests. Mixing of anti-parasitic substances, like ash, tobacco leaves, neem leaves, dry lime etc, with nesting materials will keep out external parasites, thereby improve hatchability.



4. **CHICK MANAGEMENT** – Chicks are more vulnerable not only there are more disease prone but also vulnerable to predators. In Breeding Farm, special care should be taken for chick management. Chicks will be kept with mother hen in the partition made in the shelter. Specific cares for chicks at different age group have been mentioned below:



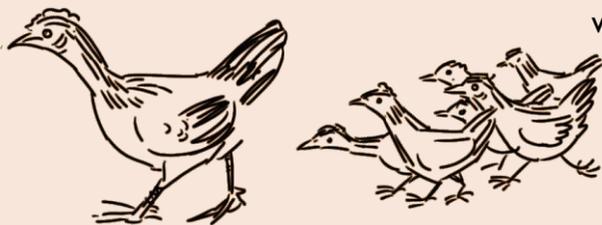
- a. **0-1 week** – 1st is most vulnerable for chicks. First 7 days, chick should be kept with hen all the time to protect them and to adjust with temperature. A hen knows how to adjust the temperature according to the sound of chicks. Breeding Farm entrepreneur should provide a day basket with jute mat, a feeder, drinker inside the basket. Food and water should be supplied in regular intervals. Ensure cleaning of basket and mat every day.
- b. **1-3 weeks** – During this period, chicks should be kept inside the Shelter or in Day basket all the time but allow hen to go for scavenging in the foraging ground from where she can hear sound of her chicks. Allow Hens to come back and spent time with chicks and then again go for scavenging. High-protein Feed and water are provided to chicks. Day basket should be cleaned regularly. Keep Hen and chicks together during night.



- c. **3-6 Weeks** – During this period, as chicks gradually grow should be allowed to go out for scavenging with hen in day times, first for few hours in the morning while Breeding Farm entrepreneur should vigil movements of chicks. Later on, increase scavenging time of chicks with hen gradually. Provide high-protein rich feed to chicks in the Day basket, don't allow older birds inside the basket (creep feeding). Keep hen and chicks together at night.



- d. **After 6 weeks** – After 6 weeks, basket system should be removed; chicks should allowed scavenging freely with mother hen and with other birds. Supplementary feed should be given in the evening as per requirement. After 6 months, 50 % of chicks should be sold to other households. Chicks can be given on sharing basis if that is prevalent as traditional system in the village.



5. **FLOCK MANAGEMENT** – Proper flock management is very important in the breeding farm. Having adequate foraging ground (2000 sq mt) with all package of practices are developed in the foraging area, A Breeding Farm should be able to keep 50 hens and 10 cocks as breeding stock. It should maintain 1/4th of hens are in laying eggs, 1/4th hen are in hatching, 1/4th hens are brooding / with chicks and rest 1/4th are in dry. This sequence will ensure regular chick production and Entrepreneur can give proper attention for chick management (mentioned in earlier section).

- a. It is important to sell 50 % of chicks at the age of 30-45 days which will reduce the feed requirement of the breeding farm. Another 25 % of chicks should be sold at the age of 90-100 days when they are growers and rest 25 % should be allowed to grow to Adult stage. Some of these adult birds will be useful for replace current breeding stock and rest should be sold in the market.
- b. In case, pocking is observed in the Breeding Farm, entrepreneur should sell out more birds (growers and cocks; but maintain breeding stock) or increase foraging site or keep cocks confined / isolated from growers and hens.

6. **SUPPLEMENTARY FEEDING** – Breeding Farm is a free-range system where poultry find most of their feeds through scavenging in foraging area. Availability of scavenging / foraging feed resource base (SFRB) varies due to change of climate, geography, vegetation cover and package of practices in the breeding farm. Supplementary feeding is required in the Breeding Farm (70-75% of feed should come from scavenging), though quantity of supplementary feed is dependent on availability of SFRB.



Supplementary feeding is required most to the chicks of early age, as they are unable to search their food by their own. Requirement of supplementary feed for birds of different age group is given below:



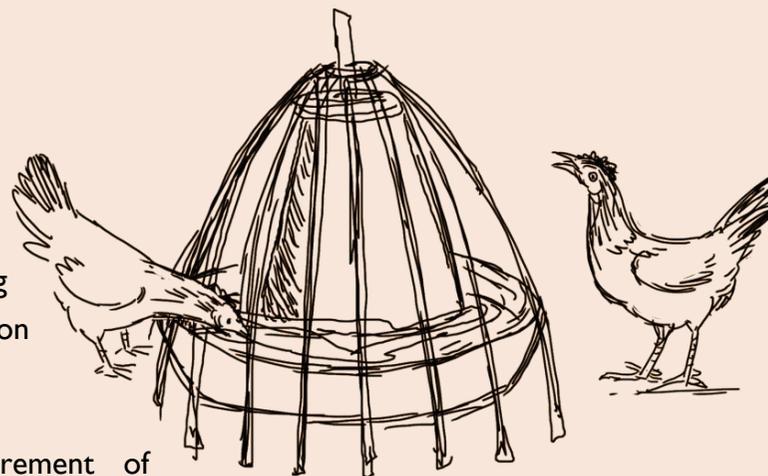
SI No	Age (weeks)	Amount of Supplementary feed required for scavenging birds / day (gram dry weight)
1	Week 1	10-15 gm
2	Week 2	15-20 gm
3	Week 3 – 4	20-25 gm
4	Week 5 – 8	30-35 gm
5	Week 8-27 (growers)	30-40 gm
6	From week 28 (Adult)	25-30 gm

As mentioned in chick management section, chicks up to age of 2 weeks should be given protein rich supplementary feed only. Chicks between 3-4 weeks should be given supplementary feed twice a day as per requirement mentioned in the above table. To keep the birds hungry for scavenging, allow them to search food in the early morning and then give half of the supplementary feed in day time (between 8-

10 am) and rest in the evening when birds return to shelter after foraging. Give feed to chicks first inside the shelter, then hens and growers and cocks at the last.

Use feeder, feed cafeteria for providing feed to reduce any waste. Clean drinking water should be provided twice in a day. Feeders and drinkers should be cleaned on daily basis.

Breeding Farm Entrepreneur should schedule and calculate weekly requirement of supplementary feed for the birds and store feed required for 1 month at least. It is better to use own farm grown material to produce homemade feed mix.



CALCULATION OF SUPPLEMENTARY REQUIREMENT IN BREEDING FARM

Categories	Number of Birds	Per birds per day requirement (gm)	Amount of Supplementary Feed Needed per day (kg)
Chicks	100	10	1 kg (100X10 ÷ 1000)
Growers	50	20	1 kg (50X20 ÷ 1000)
Hens	50	30	1.5 kg (50X30 ÷ 1000)
Cocks	10	30	0.3 kg (10X30 ÷ 1000)
Total (in Kg) / day			3.8
Supplementary Feed Requirement for a week =		26.6 kg (same number of birds)	
Supplementary Feed Requirement for 1 Month =		114 kg (same number of birds)	

It is important to measure the container (which is used for providing feed) when it is full. A small electronic weighing machine should be kept in the Breeding Farm which will be used for both weighing of feed as well as to check growth of the birds (experimental basis).

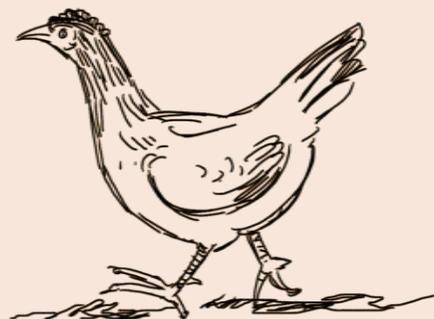
7. **MIXING AND FORMULATING FEEDS** – In Breeding Farm, it is better to produce homemade feed mix for poultry. To keep the feed cost low, entrepreneur should grown raw materials within the foraging ground and also in the farm land. Composition of homemade poultry feed is given in the below mentioned table.

Age	Cereals (millets bran, Sorghum, Maize, rice bran) (in gm)	Oil cakes (cotton seed, groundnut, sesame, sunflower) (in gm)	Fish meal, egg shell crash (in gm)	Cassava tubers (in gm)	Total (in gm)
0-8 weeks (for Chicks)	700	200	100	-	1000
9-27 weeks (for growers)	650	150	50	150	1000
> 27 weeks (for Adult)	600	100	100	200	1000

In order to make high quality poultry, Krishi Vigyan Kendra (KVK), Namakkal suggested following composition for poultry feed of different age groups.

S.No	Details	Chick mash (0-10th week)	Grower mash (11-18th Week)	Layer mash (19th wk onwards)
1	Crude Protein (%)	20	16	18
2	Energy	2600	2600	2600
Feed Ingredients				
1.	Maize	40	30	40
2.	Bajra	5	10	10
3.	Sorghum	5	5	5
4.	Rice broken	5	10	?
5.	Soya cake	23	13	15
6.	Fish meal	5	5	5
7.	Sunflower Cake	4	10	10
8.	De oiled Rice bran	10	15	10
9.	Dicalcium phosphate	1	1	1
10	Calcite	1	1	2
11	Shell grit	1	1	2
	Total	100	100	100
12	Vitamin Mixture	250 gms	250 gms	250 gms
13	Trace Minerals	100 gms	100 gms	100 gms;
14	Cocciostat	100 gms	100 gms	-
15	Salt	200 gms	200 gms	200 gms
16	Liver Tonic	100 gms	100 gms	100 gms

8. **DISEASE MANAGEMENT** – Even though, indigenous birds have more resistance to diseases, however, at Breeding Farm proper healthcare management system has to be established. Since, birds are exposed to outdoor facilities, it is important to have proper bio-security measures in the breeding farm to reduce risk of diseases in the flock. There are sources like, litter, feed, water, wild birds, rodents, insects, dogs, cats, vehicle, and equipments. Birds purchased from outside could also be potential source of disease spread. Therefore, care should be taken to prevent diseases to enter in the flock.



It is extremely important for Breeding Farm Entrepreneur 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 dropping with worm/ blood/diarrhea
Breath quietly	Cough, sneeze, and breath noisily and may have nasal discharge

Careful management can reduce disease occurrence in Breeding 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



S. No.	Age	Particulars
01	7th day	Lasota vaccination against Ranikhet Disease-I/O or I/N
02	14th day.	Lasota vaccination against Ranikhet Disease-I/O or I/N
03	8th week	Fowl pox vaccination against Fowl pox disease –S/C or I/M
04	9th week	RDVK vaccination against Ranikhet Disease–S/C or I/M
05	18th week	RDVK vaccination against Ranikhet Disease–S/C or I/M
06	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 schedule recommended by KVK, Namakkal

COMMON DISEASES OF POULTRY

Diseases are often characterized according to their aetiology, such as virus, bacteria, fungi, parasites and their causes, e.g., nutritional disorder. List of some common diseases and their treatments are given in the below table:

Sl No	Disease (Common Name)	Causal Organism	Symptoms	Prevention Measures	Treatment Options
I	Raniket Disease/New castle disease 	Virus	<ul style="list-style-type: none"> • Yellowish/green diarrhea • Twitching of neck • Paralysis • Respiratory Distress • Prostration 	Vaccination in time <ul style="list-style-type: none"> • By vaccination: For Chicks: <ul style="list-style-type: none"> • F1 RD (Drops in the eye or in nose) • 3rd day(Drops in the eye or in nose) • 7th DAY • 28th DAY For Adult <ul style="list-style-type: none"> • F2 RD vaccination(0.5 ml S/C or I/M) • 42 day 	<ul style="list-style-type: none"> • Nutritious feed and clean water, reduce the stress and increases disease resistance. • Not leaving the birds outside in summer afternoons will reduce the mortality • Supportive treatment with tonics like ostocalcium may be some times helpful

Sl No	Disease (Common Name)	Causal Organism	Symptoms	Prevention Measures	Treatment Options
2	Fowl pox 	virus	<ul style="list-style-type: none"> • Wart like nodules on comb, face and wattles • Cankers in mouth, larynx and trachea • Brown lesions in larynx. When removed an eroded area is left 	<ul style="list-style-type: none"> • Vaccination • Wing web method or • 0.5 ml i/m • Hygienic shelter 	<ul style="list-style-type: none"> • Apply any antiseptic ointment like Soframycin, Terramycin etc • Coconut oil with turmeric powder application. • Lorexane, Nemlent, Himax ointment • Terramycin or Gentamycin eye drops if eyes are effected
3.	Marek's Disease	virus	<ul style="list-style-type: none"> • Labored breathing • Lameness, Paralysis • In coordination, Blindness • Paleness of comb and ear lobes • Green diarrhea 	<ul style="list-style-type: none"> • Vaccinate only healthy birds. • Only 1000 dose vials are there with BIOMED. • Dissolve in 200ml diluents. • Dose:0.2 ml S/c or I/M 	<ul style="list-style-type: none"> • As it is transmitted through embryo, layers should be maintained very hygienically following bio security measures.
4	Corhyza	Bacteria/virus	<ul style="list-style-type: none"> • Watery swollen eyes and face • Purulent nasal exudates • Eye lids stick together by mucus and exudates • Gaspng • Gargling sound during respirations 	<ul style="list-style-type: none"> • Well Ventilation • Dry flooring • Prevention of overcrowding in shelters 	<ul style="list-style-type: none"> • Antibiotics like Streptomycin, Sulphonamides, Bactrisol, Erythromycin should be used under the guidance of local veterinarian.
5	Bacillary white diarrhea	Salmonella	<ul style="list-style-type: none"> • White paste adheres to vent. • Weak, flock moves to one corner of the shed. 	<ul style="list-style-type: none"> • Strict hygienic measures • Remove the infected birds 	<ul style="list-style-type: none"> • Tetracycline powder or • Amoxyllin powder • Sulphonamide • Fluoroquinolones as per • Local vet advice
6	Coccidiosis	Protozoa	<ul style="list-style-type: none"> • Bloody diarrhea, 	<ul style="list-style-type: none"> • Dry flooring, • Prevention of foraging in 	<ul style="list-style-type: none"> • Codrinol, Amprolium and

SI No	Disease (Common Name)	Causal Organism	Symptoms	Prevention Measures	Treatment Options
			<ul style="list-style-type: none"> Vent pasted with blood 	moist areas continuously <ul style="list-style-type: none"> Frequent changing of flock site Provision of potable water 	sulphonamides
7	Internal parasites	Worms	<ul style="list-style-type: none"> Weak, anemic Worms found in feces and intestines also 	<ul style="list-style-type: none"> It is not possible to take preventive measures in foraging back yard poultry 	<ul style="list-style-type: none"> Piperzine hexahydrate, albendazole can be used once in three months to all flocks
8	External Parasites	Ticks and mites	<ul style="list-style-type: none"> Irritability leads to stunted growth and loss of appetite 	<ul style="list-style-type: none"> Fumigation and white washing and spraying pesticides in sheds Change the shelter for a fortnight in half year 	<ul style="list-style-type: none"> Butox, Tiktak spraying on birds or dip in the solution of butox or tiktak in a dilution of 1ml of medicine and 1000ml of water. Keeping fumigation with dried neem leaf in sheds and keeping neem leaf in hatching baskets.
9	Fowl typhoid Salmonellosis	Bacteria	<ul style="list-style-type: none"> Dejection. Ruffled feathers .In-appetence. Thirst. Yellow diarrhea .Reluctance to move 	<ul style="list-style-type: none"> The bacteria can enter s through air, water, feed. Hygienic conditions especially dry flooring in shelters is essential. Biosecurity measures are to be followed 	<ul style="list-style-type: none"> Tetracycline powder or Amoxyllin powder Sulphonamide Fluoroquinolones as per Local vet advice
10	Heat stroke	High climatic temperatures	<ul style="list-style-type: none"> More thirsty Dehydration 	<ul style="list-style-type: none"> Provision of cool and good water in foraging area and near shelter Keeping the birds in afternoons in cool shelters. Green leafy vegetables may be provided. 	<ul style="list-style-type: none"> Glucose water and watermelon or kheera may be provided in acute conditions

SI No	Disease (Common Name)	Causal Organism	Symptoms	Prevention Measures	Treatment Options
11	Fowl cholera	Bacteria (Pasteurella)	<ul style="list-style-type: none"> • Infection spreads through the feed, water and equipment • Greenish diarrhea, Purple comb and wattles, swollen wattles, ruffled feathers, swollen joints, lameness and sudden deaths occur 	<ul style="list-style-type: none"> • Improving the sanitation will reduce the infection 	<ul style="list-style-type: none"> • Treatment with antibiotics like Tetracyclines, Erythromycin, Streptomycin, Penicillin and Sulphonamides are effective if used under veterinarian guidance.

The indiscriminate use of antibiotics and chemical drugs in organized poultry farms poses the problem of antibiotic resistance. Therefore, some herbal low cost ethno-veterinary medicines are also useful at Breeding Farm. Some advantages of using Ethno-Veterinary Medicine are given below:

- It provides poultry health care at farmer's door step making it farmers friendly.
- It provides cost effective treatment in poultry using locally available herbs when compared to western medicines.
- It reduces the use of antibiotics thereby reduces the risk of antibiotic residues in animal products and antibiotic resistance.
- It helps to preserve the indigenous technical knowledge for future generation.
- It helps to preserve the medicinal herbs biodiversity.
- It provides herbal intervention for treatment of some viral diseases such as Newcastle disease and Fowl pox disease in poultry.

Some Herbs / plants used for Entho-veterinary medicines are given in the below mentioned table:

Sl. No.	Herb/ herb'spices being used in poultry	Used for
1	Turmeric powder (<i>Curcuma longa</i>)	<ul style="list-style-type: none"> • Growth promoter and as supportive therapy for (a) Wing rot, (b) CRD, (c) Respiratory diseases, (d) External parasite (with dry fish for dipping)
2	Garlic (<i>Allium sativum</i>)	<ul style="list-style-type: none"> • Growth promotion, • New Castle Disease (spray) • Top dressing as pieces for breeder males
3	Pepper (<i>Piper nigrum</i>)	<ul style="list-style-type: none"> • CRD • Respiratory distress
4	Tulsi (<i>Ocimum sanctum</i>) leaves	<ul style="list-style-type: none"> • Respiratory problems • Growth promoter
5	<i>Zingiber officinale</i> (Inji)	<ul style="list-style-type: none"> • Respiratory problems
6	Neem (<i>Azadiracta indica</i>) leaves	<ul style="list-style-type: none"> • Fowl pox • New Castle Disease
7	Dried neem fruit	<ul style="list-style-type: none"> • Immunostimulant
8	Neem oil	<ul style="list-style-type: none"> • Fly control
9	Onion (<i>Allium cepa</i>)	<ul style="list-style-type: none"> • Growth promoter, • NewCastle Disease
10	Amla (<i>Emblica officinalis</i>)	<ul style="list-style-type: none"> • Heat stress
11	Lime juice	<ul style="list-style-type: none"> • Heat stress (source of Vit C)
12	Areca nut (<i>Areca catechu</i>)	<ul style="list-style-type: none"> • Tape worms
13	Betel leaves (<i>Piper betle</i>)	<ul style="list-style-type: none"> • Gout

S. No	Herb/ Herbspices	Purpose	Dose
1.	Turmeric	• Growth Promoter	• 1 kg per tonne of chick feed • 1-2 kg per tonne of chick and grower feed • 1 kg per tonne of broiler feed
		• Wing rot	• 1-2 kg per tonne of feed with garlic
		• Fowl pox	• Turmeric and neem paste for external application
		• Respiratory conditions	• 1-2 kg per tonne of feed
2.	Garlic	• Feed supplement	• Chick feed – upto 4 kg per tonne • Layer feed – up to 8 kg per tone
		• Spray in vv ND	• 5 – 10 ml of extract in one Litre of water for spray
		• Breeder male	• Top dressing with garlic pieces for breeder male
3.	Small onion	• Growth promoter	• 1 kg per tonne of chick feed
4.	Neem leaves	• Fowl pox	• Turmeric and neem paste for external application
5.	Neem oil	• Fly control	• As spray on litter in poultry farms
6.	Dried neem fruit	• Immuno stimulant	• 0.5 to 1 kg per tonne of poultry feed
7.	Amla	• Antistress	• 1 kg per tonne of poultry feed during summer
8.	Lemon	• Antistress	• Lemon juice added in water during summer
9.	Betel leaves	• Gout	
10.	Areca	• Against tapeworm	
11.	Green chirata	• Dewormer	• 4-5 kg dried per tonne of feed once in 2-3 months
12.	Aloe vera	• Coccidiosis	



6

BUSINESS PLAN AND MARKETING

In Breeding Farm, entrepreneur has to develop a business plan before start of the farm. Starting with 50 hens and 10 cocks, breeding farm should target producing around 1000 chicks in a year to make this economically profitable enterprise. Estimation of production of Breeding Farm is given in the below mentioned table.

Month	Assumption	Egg Production	Chick Produced	Salable Chicks	No of Grower	No of Adult
		10 eggs/bird/clutch	25% loss during hatchability in 2 clutch and 50 % for summer clutch	50 % chicks will be sold at 30 day	25 % Grower will be sold at 6 month age	25%
1st Clutch Cycle 4th month after establishing Breeding Farm	15 birds Hatching	150	113	56	28	28
5th Month	15 birds Hatching	150	113	56	28	28
6th Month	20 birds Hatching	200	150	75	38	38
2nd Clutch Cycle - 7th Month	15 birds Hatching	150	113	56	28	28
8th Month	15 birds Hatching	150	113	56	28	28
9th Month	20 birds Hatching	200	150	75	37.5	37.5
3rd Clutch Cycle -10th month	15 birds Hatching	150	75	38	19	19
11th Month	15 birds Hatching	150	75	38	19	19
12th month	20 birds Hatching	200	100	50	25	25
Total		1500	1000	500	251	251
		Net Selling	Birds after 25 % mortality at Chick stage and 20 % during grower and 10 % adult stage	375	200	225

Breed Farm should start selling of 50 % chicks from the 1st month of production. Remaining 25 % chicks should be sold as growers and rest 25 % as adult. In a year time, one Breeding Farm should be able to sell 375 chicks, 200 growers and 225 Adults with a rate of Rs 75, Rs 100 and Rs 250 respectively. Therefore the enterprise should achieve a gross return as mentioned in the below table:

Birds – Age groups	Unit	Price	Number	Amount (in Rs)
Chicks	per chicks of 30-35 days	75	375	28125
Grower	per growers at 90 days	100	200	20000
Adult	Adults 7 months	250	225	56250
Gross Return				104375

Annexure – Some plants for BYP live fencing

Live fencing plants				
SI No	Botanical name	Telugu name	Propagation	Growth habit
1	<i>Vitex negundo</i>	Vavili	Stem cuts	Fast growing
2	<i>Lawsonia inermis</i>	Gorintaku	Seeds	Medium
3	<i>Duranta plumieri</i>	Duranta	Seeds	Medium
4	<i>Leucaena leucocephala</i>	Subabul	Seeds	Fast growing
5	<i>Agave americana</i>	Agave	Seedlings	Fast growing
6	<i>Jatropha curcas</i>	Nepalam	Seeds	Fast growing
7	<i>Glyricidia sepium</i>	Glyricidia	Seeds/ Stem cuts	Fast growing

