







Participant Handbook

Sector

Agriculture and Allied

Sub-Sector **Poultry**

Occupation **Poultry Farming**

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NSQF Level 3



Layer Farm Worker

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Agriculture Skill Council of India

6 Floor, GNG Building, Plot No.10

Sector - 44, Gurugram - 122004, Haryana, India Email: info@asci-india.com

website: www.asci-india.com

Phone: 0124-4670029, 4814673, 4814659

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Shri Narendra Modi Prime Minister of India







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for

SKILLING CONTENT: PARTICIPANT HANDBOOK

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It is expected that this publication would meet the complete requirements of QP/NOS based training delivery, we welcome the suggestions from users, Industry experts and other stakeholders for any improvement in future.

About this book

A Layer Farm Worker is responsible for day – to - day care and ensuring health and safety of the birds for production of eggs. A Layer Farm Worker is responsible for feeding, watering and ensuring general well-being of birds and ensuring that the shed/housing of the birds is clean and safe and that the farm is in a proper condition to carry out layer farming and production of eggs. A Layer Farm Worker must have the ability to plan and organize.

The trainee will enhance his/her knowledge under the guidance of the trainer in the following skills:

- **Knowledge and Understanding:** Adequate operational knowledge and understanding to perform the required task
- **Performance Criteria:** Gain the required skills through hands on training and perform the required operations within the specified standards
- **Professional Skills:** Ability to make operational decisions pertaining to the area of work.

The handbook incorporates well-defined roles for regular care of birds and ensuring health and safety of birds at the farm. The individual must posses reading and writing skills with a mechanical aptitude and trouble shooting skills. In addition, the individual must have stamina and professional hygiene. The participant should be result oriented and responsible for his/her own working and learning. The participant should also be able to demonstrate skills of using various tools and decision making for instant problem solving.

Symbols Used



Key Learning
Outcomes



Steps



Time



Tips



Notes



Unit Objectives



Table of Contents

S.No	Modules and Units	Page No
1.	Introducon	1
	Unit 1.1 - Introduction to Layer Farming in India	3
2.	Construct Poultry Sheds and Ensure their Maintenance (AGR/N4335)) 5
	Unit 2.1 - Selection of sites for poultry Houses	7
	Unit 2.2 - Principle of layer house design and construct	17
	Unit 2.3 - Design of brooder house	22
	Unit 2.4 - Design of grower house	26
	Unit 2.5 - Design of layer house	31
3.	Feeding Brooding and Chick Management (AGR/N4336)	32
	Unit 3.1 - Feed formulation	34
	Unit 3.2 - Feed ingredients	40
	Unit 3.3 - Brooder management	49
	Unit 3.4 - Grower management	54
	Unit 3.5 - Layer management	60
	Unit 3.6 - Light management for layer birds	66
4.	Disease Prevenon and P oultry Hygiene (AGR/N4337)	72
	Unit 4.1 - Litter management	74
	Unit 4.2 - Litter management	82
	Unit 4.3 - Summer management	86
	Unit 4.4 - Winter management	90
	Unit 4.5 - Vaccinations in Layers	97
	Unit 4.6 - Bio security	103
5.	Complete Documentaon And R ecord Keeping Related To Layer Farming (AGR/No	4338) 109
	Unit 5.1 - Record keeping	111
	Unit 5.2 - Bank loan and Insurance	116
6.	Safety Hygiene and Sanitaon of P oultry Farm (AGR/N4316)	125
	Unit 6.1 - Water Hygiene	127
	Unit 6.2 - Disinfectant and disinfection of poultry house	134
	Unit 6.3 - Hazards of ammonia in poultry farm	141
	Unit 6.4 - Waste management	146

























Table of Contents

S.No	Modules and Units	Page No
7.	Employability & Entrepreneurship Skills	151
	Unit 7.1 - Personal Strengths & Value Systems	155
	Unit 7.2 - Digital Literacy: A Recap	174
	Unit 7.3 - Money Matters	180
	Unit 7.4 - Preparing for Employment & Self Employment	191
	Unit 7.5 - Understanding Entrepreneurship	200
	Unit 7.6 - Preparing to be an Entrepreneur	222



































1. Introducon

Unit 1.1 - Introduction to layer farming in India



Key Learning Outcomes 👸

At the end of this module, you will be able to:

• Explain the Layer Farming in India and its scope

UNIT 1.1: Introducon t o Layer Farming in India

Unit Objec ves | 6



At the end of this unit, you will be able to:

Explain about the basic concepts of Layer Farming

1.1.1 Introducon

Introducon:

Poultry Industry in India: Poultry is one of the fastest growing segments of the agricultural sector in India today. While the production of agricultural crops has been rising at a rate of 1.5 to 2 percent per annum that of eggs and broilers has been rising at a rate of 8 to 10 percent per annum. As a result, India is now the world's fifth largest egg producer and the eighteenth largest producer of broilers. Driving this expansion are a combination of factors - growth in per capita income, a growing urban population and falling real poultry prices.

The poultry sector in India has undergone a paradigm shift in structure and operation. A significant feature of India's poultry industry has been its transformation from a mere backyard activity into a major commercial activity in just about four decades. This transformation has involved sizeable investments in breeding, hatching, rearing and processing. Farmers in India have moved from rearing non-descript birds to today rearing hybrids such as is Hyaline, It is Shaver, Il and in Babcock, It which ensure faster growth, good live ability, excellent feed conversion and high profits to the rearers. The industry has grown largely due to the initiative of private enterprise, minimal government intervention, and considerable indigenous poultry genetics capabilities, and considerable support from the complementary veterinary health, poultry feed, poultry equipment, and poultry processing sectors. India is one of the few countries in the world that has put into place a sustained Specific Pathogen Free (SPF) egg production project.

Layer Poultry Farming

Layer poultry farming means raising egg laying poultry birds for the purpose of commercial egg production. Layer chickens are such a special species of hens, which need to be raised from when they are one day old. They start laying eggs commercially from 18-19 weeks of age. They remain laying eggs continuously till their 72-78 weeks of age. They can produce about one kg of eggs by consuming about 2.25 kg of food during their egg laying period. For the purpose of producing hybrid eggs layer, consider the various characteristics of cock and hen before breeding. There are various types of highly egg productive layer breeds available throughout the world.

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Layer Breeds

According to the nature and color of egg, layer hens are of two types. Short description of these two types are listed below.

White Egg Laying Hens: These types of hens are comparatively smaller in size. Relatively eat less food, and the color of egg shell is white. Isa White, Lehman White, Nikchik, Bab Cock BV-300, Havard White, Hi Sex White, Sever White, Hi line White, Bovanch White etc. are some popular white egg laying chickens.

Brown Egg Laying Hens: Brown egg laying hens are relatively larger in size. They eat more foods, compared to white egg layers. Lay bigger eggs than other laying breeds. Egg shell is brown colored. There are many types of brown layer available. Among those Isa Brown, Hi Sex Brown, Sever 579, Lehman Brown, Hi Line Brown, Bab Cock BV-380, Gold Line, Bablona Tetro, Bablona Harko, Havard Brown etc. are very suitable for commercial layer poultry farming.

Layer Farm Worker: This is routine manual work in specialized farming activities on a poultry farm. Work involves performing a variety of unskilled and semi-skilled poultry related tasks in accordance with specific instructions or a well established routine. Specialized tasks are also performed in connection with the caring for poultry. Work is subject to general supervision through inspections and review of results of work.

Dues:

- Feeds, waters, and otherwise cares for poultry; cleans poultry houses, pens, feeders, water receptacles, boiler rooms, and sheds.
- Keeps and checks records on mortality of poultry, feeding of poultry, and other information on poultry; prepares poultry for operations or inoculations; sterilizes hatchery equipment.
- Repairs and paints sheds, barns, and fences; loads and unloads feed.
- Collects and washes eggs, candles, and stores eggs in coolers.
- Maintains proper lighting and heating for poultry pens and incubators; puts shavings in hens nests.
- Performs related work as required.

Notes		
		
	 	
	 	









2. Construct Poultry Sheds and Ensure Their Maintenance

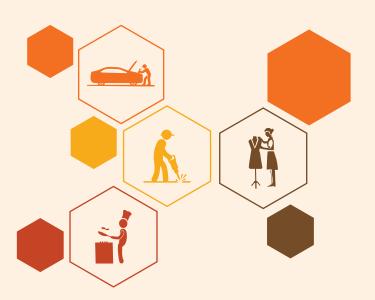
Unit 2.1 - Selection of sites for poultry houses

Unit 2.2 - Principle of layer house design and construct

Unit 2.3 - Design of brooder house

Unit 2.4 - Design of grower house

Unit 2.5 - Design of layer house



Key Learning Outcomes 👸



- List various important factors for site selection
- Outline information on land selection
- Identify and attend the environmental needs
- Locate information on common facilities

UNIT 2.1: Selecon Of Sites For Poultry Houses

Unit Objec ves | @ |



At the end of this unit, you will be able to:

 List the influencing factors for site selection including environmental needs, human resources and general facilities

2.1.1 Introducon

Farmers have to consider greatly for selection of sites for the farm buildings with new structures. Nowadays, farmers should aware of poultry house related to location of the farms such as nearby neighbors and public areas, environmental issues like water quality, odors and files, litter management, electrical supply, etc. and laws and regulations that affect farming operations. Four factors should be considered for site selection such as Land requirements, facilities, environmental issues and other management related issues.

Criteria for selecon of poultry house sites:

1. Land requirements

- Should select elevated land for construct poultry sheds and also hard rock land is more suitable. Elevated land helps to avoid water logging and flooding near the sheds.
- Avoid locating poultry farm in a swampy area or bottom of the valley as this may endanger proper management of poultry houses.
- Construct sheds in such a way that the end walls face East-West direction and the side walls face North-South direction, so that rain water will not enter the sheds.
- · Prevailing wind direction must be considered when wind currents flow from the chicken house toward any residence. odors from poultry houses must be given adequate time and distance to dissipate before reaching a residence. The distance from the poultry house location to any residence would need to be greater if prevailing winds were toward the residence.
- Ensure sufficient land available on the farm to properly utilize the litter as fertilizer, or have proper facilities to remove or dispose the litter outside.
- Wind shed is a term which describes wind flow pattern on the downside of an existing building. To help minimize complaints by neighbors, strong consideration must be given to keep nearby homes out of the wind shed area.



Fig 2.1.1 Land requirements

Fig 2.1.2 Facilities



Fig 2.1.3 Environmental issues

2. Facilies

- Ensure adequate facility for water, electricity, telephone, approach road, supply of chicks, feed, veterinary aid and nearness to market for sale of cull birds and eggs.
- Proper roads must be adequate to allow feed trucks, chick-delivery vehicles and live-haul trucks access to the buildings during all times of the year.
- Provide adequate floor space per bird. BIS specifications for construction of poultry sheds are available.

3. Environmental issues

- Construct sheds in such a way that predators (cats/dogs/snakes) will not enter the shed. Avoid entry of rats by constructing rat proof civil structures.
- Keep the shed clean and free from flies/mosquitoes etc.
- Provide adequate light and ventilation and comfortable housing conditions during all seasons (cool in summer and warm in winter).



Fig 2.1.4 Managemental issues

4. Managemental issues

- After every batch of growers/culled birds is disposed off, the dirty litter material and manure should be removed, walls and floors should be cleaned, white washed with lime and disinfected with 0.5% malathion or DDT insecticide spray or formaldehyde solution.
- If deep litter system is followed, always use dry and clean litter material (sawdust, paddy husk, etc.). Spread 4" layer of litter on the floor, keep clean/disinfect brooding, feeding and watering equipment and then introduce chicks in the house. The litter material should be always kept loose and dry. Stir the litter twice a week. Any wet litter/droppings etc. should be removed and replaced with fresh/clean dry litter.
- If cage system is followed, ensure that droppings are spread with lime powder or 10% malathion spray twice a month to prevent menace of flies. The droppings under the cage can be removed after 6 months.
- Provide strong roof and hard flooring. Raise plinth of the shed at least one feet above the outside ground level.
- Ensure the constant and steady demand for eggs is available and the market is nearer to the farm.

Conclusion

Proper siting of new poultry house or farm is extremely important. Problems can result if facilities are built in unfavorable locations. The best time to handle potential problems is before they occur. Proper planning will help prevent environmental problems from occurring, and will save time, money and headaches in the long run.

Tips



- · Selection of site
- Environmental factors
- Basic infrastructural facilities
- Human resources

1. Minimum distance between two farm? Ans:
2. Minimum distance between one farm house to other farm house? Ans:
3. Site need to be elevated (True/False)? Ans:
4. Enumerate the common facilities ? Ans:
5.List out important environmental factors ? Ans:
6. Optimum requirement of water ? Ans:
7.Discuss marketing outlet ? Ans:
8. Why predators need to be avoided? Ans:
9. Where the fly nuisance will start?
Ans:
Notes

UNIT 2.2: Principle of Layer House Design and Construct

At the end of this unit, you will be able to:

• Explain provide basic scientific information for construction of houses for brooder, grower and

2.2.1 Principle Of Layer House Design and Construct -

Layer farm layout and blue print

- Layout should not allow visitors or outside vehicles near the birds
- The shed should be so located that the fresh air first passes through the brooder shed, followed by grower and layer sheds. this prevents the spread of diseases from layer houses to brooder house
- There should be a minimum distance of 50-100 feet between chick and grower shed and the distance between grower and layer sheds should be of minimum 100 metre
- The egg store room, office room and the feed room should be located near entrance to minimize the movement of people around the poultry sheds
- The disposal pit and sick room should be constructed only at the extreme end of the site.

Layer house design and construcon

A poultry house should provide maximum comfort to the bird. It should have a healthy
atmosphere with good ventilation. It should be cooler during summer and comfortably warm
during winter. It should have enough light and a comfortable micro-climate. While planning for
constructing a poultry house, provisions should be made for future expansion.

Principles of housing

- · Housing should provide comfort and protection to birds
- Scientific management in a controlled manner
- Easy, convenient and economic operations
- Reduces the total cost of production
- Maximizes flock performance
- Ensuring better health and welfare

- Proper micro-climatic conditions
- Increased stocking density
- Optimum and uniform growth rate

I. Orientaon

• Long axis should be East-west and width extending North-South in tropical countries.

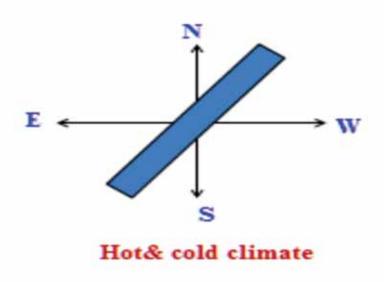


Fig 2.2.1 hots Cold Climate

II. Foundaon

• Solid concrete blocks and bricks with 1 to 1.5 feet below the surface and 1 to 1.5 feet above the ground level

III. Floor

- A cement concrete floor will eliminate disease problem and help in easy cleaning and disinfection and reduce problems due to insects, rodents, worms and seepage
- In case of cage house the working area should be cemented
- Floor should have a slope for easy cleaning and flow of water
- Should be impermeable to parasites and easy to clean

IV. Length

· Can be of any extend

V. Width

- Not more than 30 feet
- If the width of the shed is more than 30 feet, ridge ventilation at the middle line of the roof top with proper overhang is must
- Can be of any width in EC houses up to 40 feet

VI. Height

- From foundation to the roof at side should be 8-10 feet (eaves height) and at the centre 10-12 feet
- In case of cage houses, the height is decided by the type of cage arrangements (3 or 4 tier)

VII. Side wall

- Usually half of two-thirds area will be kept open and fitted with wire mesh in floor houses.
- In cage houses, avoid side wall. In EC houses should have solid side walls.

VIII. Doors

· Either single or double should swing both ways

IX. Overhang

- The roof at the eaves should at least extend 3 to 4 feet (1 to 1.25 meters) and this may depends on height of the house.
- The normal thumb rule is that the length of the overhang will be half the window height

X. Roof

• The roofing materials used may vary based on the needs, requirements and budget of the farmer. The various roofing materials are straw, coconut leaf, palmyrah leaf, light roof (Asphalt coated), tiles (Country and Mangalore), plastic, asbestos, aluminium, fibre glass, etc.

Poultry house

A good poultry house must provide:

- Locational, structural and operational biosecurity
- Tap the maximum genetic potential of the bird
- Have operational efficiency
- Comfortable to the birds and workers
- Economical and durable
- Suitable for local agro-climatic conditions

Specificaon Of Poultry House

Growth House and Cages specificaon

- Width of each "M" cage unit = 82" (with 2" overlap)
- Width of each "L" cage unit = 41" (with 2" overlap)
- Therefore width of 4-M + 2-L cages = 410" = 34"-2"
- Width of 5 elevated platforms = 5 X 2 = 10"
- So shed width = 10" + 34"-2" = 44"-2"
- Total shed area = 865" X 44"-2" = 38204 sq. ft
- Total number of growers/shed = 1,02,000
- Therefore shed space/grower = 0.392 sq. ft

Layer cage and House specificaon

- Shed height @ eaves = 16" and @ ridge = 22-24"
- Natural ventilation assisted by 48" exhaust fans, 1/each 50 ft length, fixed near ridge
- Automatic feed trolley and foggers are essential
- Automatic egg collection = optional
- Number of cage rows = 24 (6 for "M and 3 for "L)
- Hens/box = 6 in top and 5 in middle and bottom rows
- Cage box size = Top = 18" depth, 20" front, 16" height at back and 18" height at front, with 7" egg roll out at front
- Middle and bottom rows cage boxes = 15" depth and 20" front for 5 hens





Fig 2.2.1 Raised poultry house

Fig 2.2.2 M type tier system

Layer House Design





Fig 2.2.3 Foundation

Fig 2.2.4 Concrete floor

Side walls in deep li er and cage system



Fig 2.2.5 Side walls in deep litter and cage system



Fig 2.2.6 Side walls in deep litter and cage system



1. Right orientation of the house
Ans:
2. Maximum permissible breadth of the house
Ans:
3. Maximum permissible length of the house
Ans:
4. Maximum height of the sidewall
Ans:
5. Height of the sidewall
Ans:
6.Height of the centre of the building
Ans:
78:
7. Distance between the house
Ans:
8. Optimum floor space for the brooder
Ans:
9. Reason for the east to west orientation
Ans:-
10. Nature of the flooring
Ans:

Tips



- Scientific norms for construction of house
- Importance of cross ventilation
- Keeping up optimum microenvironment temperature
- Optimum norms for the brooding house

Notes ==