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Participant Handbook

Sector
Agriculture and Allied

Sub-Sector
Poultry

Occupation
Hatchery Operator

Reference ID: **AGR/Q4402, Version 1.0**
NSQF Level 3



Hatchery Operator



Shri Narendra Modi
Prime Minister of India

“ Skilling is building a better India.
If we have to move India towards
development then Skill Development
should be our mission. ”



Certificate
COMPLIANCE TO
QUALIFICATION PACK- NATIONAL OCCUPATIONAL
STANDARDS

is hereby issued by the

AGRICULTURE SKILL COUNCIL OF INDIA

for

SKILLING CONTENT: PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: **'Hatchery Operator'** QP No. **'AGR/Q4402 NSQF Level 3'**

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Authorised Signatory
(Agriculture Skill Council of India)

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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 Hatchery Operator is responsible for ensuring the working and performance of tools and equipment required for incubation in a hatchery. As per National Occupational Standards (NOS), the Hatchery Operator should be laborious and must have the ability to make operational decisions pertaining to his area of work. A Hatchery Operator is responsible for assessing the functioning of the incubation equipment and deciding on the specifications of the setters. 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 Installation, Testing, and Commissioning of a Hatchery Operator. The handbook will facilitate the participant to be skilled enough in mechanical aptitude, trouble shooting, tool handling and demonstration. The handbook will also help the trainees or participants to learn good communication skills.

Symbols Used



Key Learning Outcomes



Steps



Time



Tips



Notes



Unit Objectives



Exercise

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1. Introduction

Unit 1.1 - Introductions to setting operation



Key Learning Outcomes

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

- Understand the setting operations

UNIT 1.1: Hatcheries in India and its Scope

Unit Objectives

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

- Understand and get to know about the basic concepts of setting operations

1.1.1 Introduction

A hatchery is a facility where eggs are hatched under artificial conditions, especially those of fish or poultry. It may be used for ex-situ conservation purposes, i.e. to breed or conserve endangered species under controlled conditions; Alternatively,, it may be for economic reasons (i.e. to enhance food supplies or fishery resources).

Poultry hatcheries

Poultry hatcheries produce a majority of the birds consumed in the developed world including chickens, turkeys, ducks, geese, and some other minor bird species. A few poultry hatcheries specialize in producing birds for sale to backyard poultry keepers, hobby farmers, and people who are interested in competing with their birds at poultry shows. These hatcheries produce chicks of several different breeds and varieties, often including some heritage or endangered breeds.

Larger poultry hatcheries are related to industrial poultry meat or egg production. This is a multibillion dollar industry, with highly regimented production systems used to maximize bird size or egg production versus feed consumed. Generally large numbers are produced at one time so the resulting birds are uniform in size and can be harvested (for meat) or brought into production (for eggs) at the same time. A large hatchery produces 15 million chicks annually.

Poultry generally start with naturally (most species) or artificially (turkeys and Cornish-related chicken breeds) inseminated hens that lay eggs; the eggs are cleaned and shells are checked for soundness before being put into the incubators. Incubators control temperature and humidity, and turn the eggs until just before they hatch. Three days before the eggs are scheduled to hatch, they are moved into a hatcher unit, where they are no longer turned so the embryos have time to get properly oriented for their exit from the shell, and the temperature and humidity are optimum for hatching. Once the eggs hatch and the chicks are a few days old, they are often vaccinated.

1.1.2 Setting Operator

Optimum hatchability and chick quality can only be achieved when the egg is held under optimum conditions between laying and setting in the incubator. Remember that a fertile egg contains many living cells. Once the egg is laid, its hatching potential can at best be maintained, not improved. If mishandled, hatching potential will quickly deteriorate.

2. Preparation and Maintenance of Work Area For Hatchery Operations



Unit 2.1 - Hatchery design and layout

Unit 2.2 - Hatchery equipments

Unit 2.3 - Collection of hatching eggs

Unit 2.4 - Storage of hatching eggs



Key Learning Outcomes

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

- Receive cleaned hatching eggs
- Undertake fumigation of eggs for sanitation
- Ensure proper storage in egg holding room
- Undertake Pre incubation warming
- Ensure proper loading of eggs in the setter
- Undertake candling of eggs for removing infertile eggs
- Ensure proper transfer to the hatcher
- Undertake grading of eggs
- Maintain clean work area
- Undertake maintenance of tools and equipments

UNIT 2.1: Hatchery Design and Layout

Unit Objectives

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

- Undertake fumigation of eggs for sanitation

2.1.1 Introduction

- To have effective functioning of hatchery, its location and construction is very important. The hygienic of hatchery is also based on construction.

Location of hatchery

- Hatchery should be away from the other farms to avoid the spread of diseases
- Electricity, water, transport and labour facilities should be available in the site selected for hatchery

Office room

- Office room should be spacious and well ventilated
- This room should be connected to the store room where equipments, lead and registers are kept

Working place

- This includes egg receiving room, egg grading/storage room, hatchery room /chick sexing room/washing room
- The working process flow should be in a linear fashion from clean to dirty area

Egg storage room

- Should be easily accessible to transport so that the eggs can be received directly
- This room should be large enough to store maximum number of eggs for 1 or 2 weeks
- There should be many racks and the entire room should be air-conditioned

Fumigation room

- Meant for fumigate the hatching eggs
- The entry of air should be restricted in the fumigation room
- There should be exhaust room to remove the air from inside the room

Egg receiving room

- The tables in egg receiving room and egg assembly and trying hall should be in proper height so that work burden is reduced
- All the elements should be kept in the right hand side for easier access to work
- Capacity of egg receiving room should be more, so that more number of eggs can be placed

Incubator room

- There should be good access from incubator room to other rooms by means of sliding doors in the work side of the hatchery
- As far as possible, reduce the use of glass windows and doors
- The ceiling should be at the height of 15 feet
- There should be at least 2 feet gap between the incubator frame and the wall as to provide good ventilation throughout the incubator room
- The distance between two rows of incubator should be 6 feet

Setter size

- Size of the setter is based on the following factors:
 - Input cost
 - Maintenance cost
 - Space availability
 - Spread of infection

Chick sexing room

- Rooms should be well ventilated and must have easily washable shelves to hold the chick boxes
- Each table must be well equipped with high-powered overhead light that is adjustable for height
- This room must be provided with ample washing facilities
- The temperature of the room should be between 65 to 70°F

Sales room

- This room must have direct access from the sexing room
- The room should have a door leading directly to the road or hard standing movement for vehicles
- It should also be comfortable for the staff

Other rooms

- Bathrooms and rest rooms should be provided for the workers

Generator shed

- One or more standby source of electricity apart from the main supply source is required for the hatchery
- The room should be sufficiently large, well ventilated, and adjacent to the hatchery and with an easy access to the road
- Sufficient space should be there inside the room to keep the reserve stock of fuel and necessary spare parts

Washing room

- There should be facilities for cleaning the equipments
- Cleaning of rubber slippers and dress wears can also be done

Store room

- The room should be large enough and well planned for the racks to provide space for various hatchery items like chick boxes, packing materials and spare incubator fittings
- Good lighting facilities and access to the road is also desirable

Waste room

- This room should be away from other buildings
- Cleaning of this room should be easy

Exercise



1. Mention basic points for selection of hatchery location.

Ans:.....
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2. Enlist different units of hatchery.

Ans:.....
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3. Enlist the requirements of egg storage room design.

Ans:.....
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4. Enumerate norms for fumigation room.

Ans:.....
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Tips



- Hatchery design needs to be one way flow
- Hygiene and management depends upon hatchery construction
- Activity of the each unit should be maximum
- Free ventilation is important in incubator room
- Chick holding room need to be warm

