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MINISTRY OF SKILL DEVELOPMENT
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Participant Handbook

Sector
Agriculture and Allied

Sub-Sector
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Occupation
Livestock Health Management

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Artificial Insemination Technician

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

Shri Narendra Modi
Prime Minister of India

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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: **'Artificial Insemination Technician'** QP No. **'AGR/Q4803 NSQF Level 3'**

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S.S.Arya

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

This book is about the role and responsibilities of Artificial Insemination Technician for carrying out the ground level activities involved in Artificial Insemination as per the Artificial Insemination Technician Qualification Pack (QP). Artificial Insemination Technician is responsible for Installation, Testing, and Commissioning of Artificial Insemination Technician System at farmer's field for better water management and increase in yield of crop. As per these standards the Artificial Insemination Technician should not work independently, should be laborious and must have the ability to make operational decisions pertaining to his area of work. The trainee should gain clarity of work and should be result oriented; The Trainee should also be able to demonstrate skills to use various tools in the Artificial Insemination Technician. 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 Artificial Insemination Technician System at field level by ensuring uninterrupted supply of water to the plant stand on the farm. This job-role requires the participant to work independently and be comfortable in making decisions pertaining to his/her area of work. Further it requires clarity, skill to basic arithmetic and algebraic principles too. The participant would 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

Exercise

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1. Introduction

Unit 1.1 – Understanding Livelihood

Unit 1.2 – Knowing your village

Unit 1.3 – Importance and role of Artificial Insemination Technician

Unit 1.4 – Continuous learning and support system.

Key Learning Outcomes

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

1. Define the meaning of livelihood and relate it with dairy farming and related business.
2. Locate institutions and resources of your village.
3. Recognize the importance and role of AI Technicians.
4. Recognize the importance of continuous learning and identify referral support system.

UNIT 1.1: Understanding Livelihood

Unit Objectives

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

1. Define the meaning of livelihood and relate it with dairy farming and related businesses.

1.1.1 Understanding Livelihood

- Your livelihood is the job you work at to earn the income that supports you.
- In simple words it is a way of earning money in order to live.

- Can you explain the livelihood of the persons in the above picture?
- How can one improve his or her livelihood or livelihood of someone?

Fig 1.1.1 Livelihood source

In technical terms, Livelihood is defined as Capabilities, Assets and Activities that people utilizes to earn living. (DFID,2000). You can remember this by expressing it as 'livelihood equation'.
Livelihood = Capabilities + Assets + Activities.
This means, one need to focus on following to improve his or her livelihood or livelihood of people in general.

1. Capabilities
2. Assets
3. Activities

Capability of a person means 'capping' or powering the abilities of a person. Abilities include physical abilities, mental abilities and skills. A person becomes capable of doing something only when he or she is able and there is proper environment or support e.g. Access to finance, access to market, road connectivity etc. Fig- 1 indicates various components of capabilities.

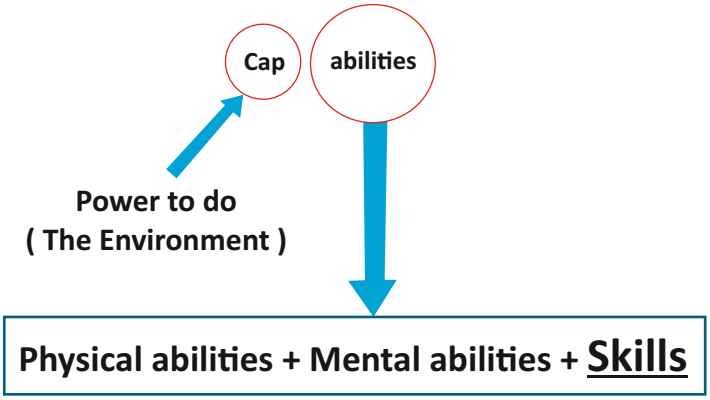


Fig 1.1.2 Understanding capabilities
(note: skill is an integral part of capabilities)

Tips

Do you know?

- Livelihood of 6 crores (60 million) rural households in India depend upon dairy sector. Out of this, two third are small, marginal and landless laborers.
- India is a global leader amongst dairying nations and produced 160.35 million tonnes of milk (Approximately 154,927,536,231.88 liter) during 2015-16.
- A large number of people are involved in various activities other than dairy farming such as marketing, distribution, veterinary service delivery and collection/processing of dairy and their product.
- India stands first in the total buffalo population in the world and second in the population of cattle. India with 30 crore bovines (e.g. cattle, buffalo) has 18% of the world's bovine population. India has 39 recognized breeds of cattle and 15 of buffaloes.

Fig 1.1.3 A small milk collector / trader in interior rural area.

Fig 1.1.4 A person cultivating and selling green fodder for dairy cattle in Assam.

Notes

UNIT 1.2: Knowing Your Village

Unit Objectives

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

1. Locate institutions and resources of your village

1.2.1 KnowingYour Village

The soul of India lives in its villages. India, having an agro-based economy, depend the most on its villages for growth.

As an Artificial Insemination Technician, you will serve dairy farmers mostly in village setting. It is important for you to learn the following about the village you are serving.

- Resources of the village.
- Village and community institutions and their activities.
- Village administration.
- The society and its composition, norms and beliefs
- Major economic activities in the village.
- Common agricultural practices, crop calendar and farming systems.
- Festivities
- Preferences of other livestock species and specific food habits.
- Climatic conditions and environment related issues affecting the village.

What are the different type of resources?

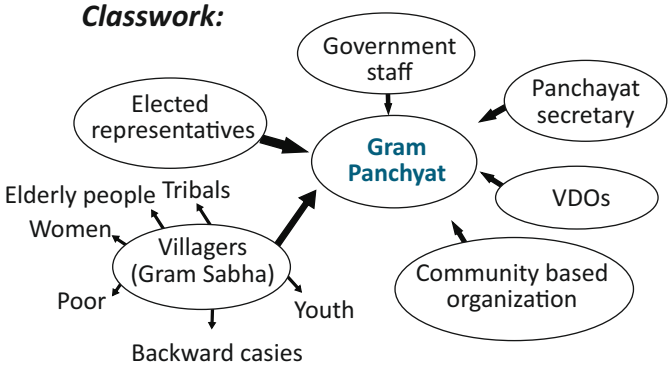
Resources in a village can be divided into:

- Natural Resources E.g. Land, Water etc.
- Man-made resources or assets of the village E.g. A hospital, connecting road
- Physical and mental abilities of people within the village.
- Skills of the people within the village.

Use a diagram like the above and discuss about functioning of local self-government e.g. *Panchayat / village council in* your area.

Discuss key environmental issues e.g. Water shortage, Climate change etc.

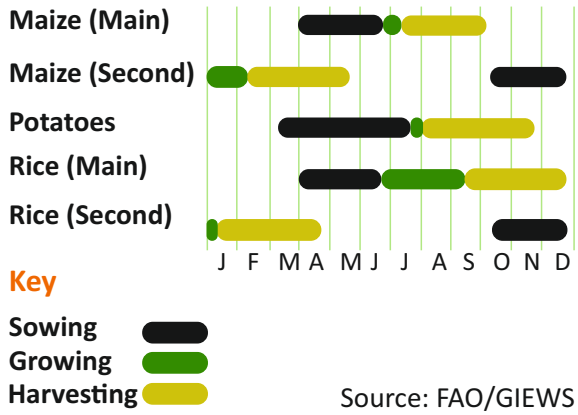
Classwork:



Assignment:

Table 1.2.1 Consider the above crop calendar of Philippines and prepare a similar one specific to your village.

Crop Calendar Philippines



Source: FAO/GIEWS

Notes

UNIT 1.3: Importance and Role of AI Technicians

Unit Objectives

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

1. Recognize your role and responsibilities as an Artificial Insemination Technician

1.3.1 Importance and Role of A I Technicians

What is Artificial insemination?

There are two types of breeding (mating and production of offspring by animals) in dairy cattle viz. Natural breeding and artificial insemination. Nowadays, artificial insemination is being popularized. In this method the semen is collected from male of superior breed characteristic and same after processing in laboratory is then introduced to the female genital organ using scientific apparatus. The technology provides unique opportunity for the genetic improvement of the species of animal to which it is applied. We will learn more about this in corresponding modules. At the end of the training you will gain the skill required to conduct artificial insemination in dairy cattle.

Why do we need Artificial Insemination Technicians?

In India, we have shortage of government veterinarians and veterinary para-professionals who can provide breeding services at the door step of farmers. Statistics indicates that number of government veterinary personnel per square kilometer in India is 0.03652. *(Calculated from 2012 OIE and Planning Commission data)*

Moreover, as per the world bank (2007-08) statistics as high as 39% of rural people in India live beyond 2 km (typically equivalent to a 20-minute walk) of an all-season road. Veterinary and breeding related services, though available in district headquarters or through government hospitals, the availability of services at the remote rural areas and at the door step of farmer is negligible.

Skilled Artificial Insemination Technician working in private sector or on contract with government at the village or community level itself can help in ensuring cattle breeding services at the doorstep of farmers.

An Artificial Insemination Technician supports the livelihood of a dairy farmer:

Refer livelihood equation mentioned in unit 1.1

An Artificial Insemination Technician helps in enhancing the productivity of dairy animals – which are the key asset of rural farmers. He /she also assist in improving the 'capabilities' of farmers and work with other agencies to ensure that dairy farming as an 'activity' remains viable.

He / She bridge the gap between rural dairy farmers and veterinarians and thus support government in dairy extension.

What are the specific roles of an Artificial Insemination Technician?

- Provide artificial insemination service to dairy farmers (mostly large animals).
- Assist in dairy husbandry extension: Promotion of best practices and appropriate technologies related to dairy arming e.g. feeding, housing, management, breeding etc.
- Assist in implementation of development programs e.g. Engagement with farmers' institutions, facilitation of marketing of farm inputs and products etc.

Notes

UNIT 1.4: Continuous Learning and Support System For Referral

Unit Objectives

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

1. Recognize the importance of continuous learning and guidance from veterinarians.
2. Recognize potential institutions for seeking referral support.

1.4.1 Continuous Learning and Support System For Referral

There is no end to learning. As a skilled professional worker, you need to continuously look for new knowledge. Scientific discoveries and technological improvement takes place every day in the animal world. What you have learned today may be obsolete with time. Continuous learning is more important in professions where one's action is directly related to life of human beings and animals.

As an Artificial Insemination Technician your work may be supervised by veterinarians. When you are working alone and there are problems, you can always refer the same to any private veterinarian or the veterinarian of a nearby government hospital. It is advisable that you suggest farmers to take veterinarian's guidance for pregnancy diagnosis of animals receiving artificial insemination.

Some of the institutional facilities where you can seek technical solution of your day to day professional issues and update your knowledge include:

- District or block level veterinary hospitals.
- Local Agri-clinic managed by practicing veterinarians.
- *Krishi Vigyan Kendra* (KVK) of your district.
- Any branch or center of State Institute of Rural Development.
- Extension centers of local agriculture or veterinary universities.
- Known facilities of NGOs.

Many of the above institutions publish leaflets, brochures etc. on varied topics. These can be a good source of information.

Keep yourself informed about written government notices, guidelines, reporting formats etc.

It is good to collect information from websites but it is advisable to always verify the credibility of the source and discuss such information with veterinarians.

Tips

1. The learning from this unit can be interesting if you look for answers to the following questions:
   - How knowledge of the village you are serving can help you support the livelihood of people? *(Refer technical definition of livelihood and types of resources in village)*
   - How can knowledge of crop calendar and village festivities help your work as Artificial Insemination Technician?
   - Why is skill development important to support livelihood? *(Refer components of capabilities and live hood equation)*
   - *What should I do to support the livelihood of a dairy farmer? (Refer livelihood equation)*
2. Always try to attend and participate in meetings of various village level institutions. Your opinion can help village leaders to plan and implement projects for dairy sector improvement.
3. Always access the 'Need' and 'Resources' within a village or service areas before suggesting any program for dairy farmers of your community.

Exercise

Q.1. Why is skill development important to support livelihood?

Q.2. What should you do to support the livelihood of a livestock farmer?

Q.3. Explain why there is need for the Artificial Insemination Technician.

Q.4. List key role and responsibilities of Artificial Insemination Technician.

Q.5. How Artificial Insemination Technician is helpful in improving the livelihood of dairy farmers. Explain in brief.

Notes