



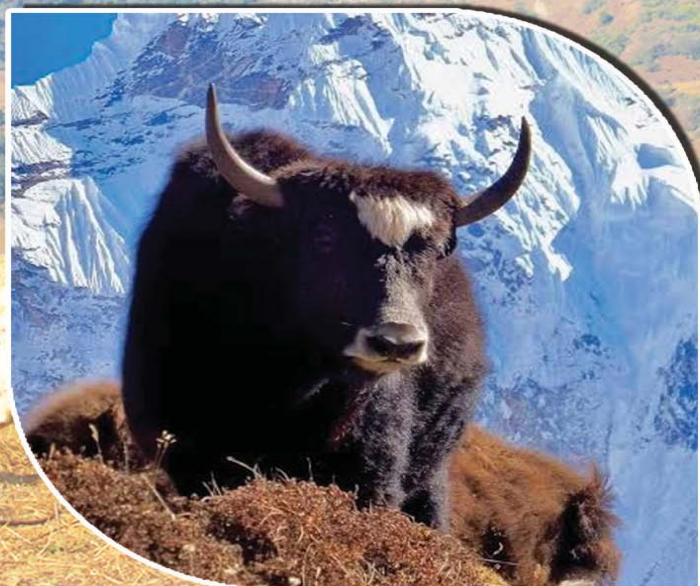
# ICAR SPONSORED SHORT COURSE

## TITLE

*"Precision Livestock Farming for Sustainable Livelihood and Nutritional Security of Highland Communities"*

**Duration : 10 Day Short Course**

**Date : 20<sup>th</sup> -29<sup>th</sup> January, 2027**



*Sponsored by*

**Agriculture Education Division  
Indian Council of Agricultural Research**

*Organized by*

**ICAR-National Research Centre on Yak  
Dirang, Arunachal**

**Patron**

**Dr. Mihir Sarkar**  
Director

**Course Director**

**Dr. Mokhtar Hussain**  
Senior Scientist (ARGO)



shortcoursenrcy@gmail.com



84150-11168, 84150-12269



www.nrcy.org

## Background

Highland livestock farming is an important component of food security, nutritional security, household income and livelihood resilience of mountain communities. Livestock such as yak, cattle, sheep, goats and other hill-adapted animals are uniquely suited to harsh high-altitude environments and provide milk, meat, fibre, manure and other valuable resources. However, hypobaric hypoxia, low temperature, seasonal feed scarcity, disease and parasitic challenges, limited veterinary services and climate variability significantly influence animal health, reproduction, welfare and productivity.

Advances in precision livestock farming, Artificial Intelligence (AI), Internet of Things (IoT), advanced genetics and breeding, assisted reproduction, precision nutrition, disease diagnostics, digital monitoring and climate-resilient management offer substantial opportunities to improve production efficiency and resource utilization. The proposed training programme will strengthen scientific knowledge and practical skills for adopting technology-driven, sustainable and resilient livestock production systems, thereby contributing to improved productivity, value addition, farmer income, livelihoods and nutritional security of highland communities.

## Objective

- 1** To impart knowledge on precision livestock technologies for highland animals, including AI, IoT, sensors and digital monitoring.
- 2** To strengthen skills in precision-based health, nutrition, reproduction and welfare management of highland livestock
- 3** To promote climate-resilient and technology-enabled production systems for sustainable livelihoods and nutritional security of highland communities.

## Course Outline

1. Scientific livestock practices for sustainable highland livelihoods
2. Precision livestock farming: AI, IoT, sensors and data-driven management
3. Challenges and future trends in IoT adoption in livestock farming
4. Advanced disease diagnosis and preventive healthcare of highland animals
5. Common diseases and parasitic infestation: Prevention and control strategies
6. Climate change and its impacts on high-altitude livestock production
7. Assisted reproduction and emerging reproductive technologies for improved fertility
8. Animal genetics and breeding: Breeding policies, transgenic animals and gene editing
9. Nutrition, precision feeding and scientific management of highland pastures



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10. Modern housing, hygiene and farm management for improved productivity and reduced costs
  11. Value addition of livestock products for enhanced income of highland farmers
  12. Dissemination of modern farm practices for quality, quantity and cost-effective production
  13. Emerging technologies and innovations for sustainable livestock production
  14. Poultry farming: Scope and opportunities in hill ecosystems

## About the Institute

The ICAR–National Research Centre on Yak (ICAR–NRCY), established in 1989 under the Indian Council of Agricultural Research (ICAR), is India's premier and sole national research institute dedicated exclusively to the scientific investigation on production, conservation, genetic improvement and sustainable management of yak. The Centre is located at Dirang, West Kameng District of Arunachal Pradesh at approximately 1,500 m above mean sea level, with its experimental yak farm situated at Nyukmadung at an elevation of approximately 2,700–2,750 m above mean sea level. The Centre functions as a specialized national research hub for addressing the biological, productive, health and management challenges of yak under high-altitude Himalayan production systems. The Centre undertakes multidisciplinary and translational research spanning yak genetic resources and germplasm characterization, conservation genetics, breeding and genetic improvement, reproductive physiology and endocrinology, reproductive biotechnology and assisted reproductive technologies (ARTs), artificial insemination and estrus synchronization, semen biology and cryopreservation, ovarian and follicular dynamics, nutrition and metabolic physiology, animal health and disease management, molecular and genomic approaches, climate–livestock interactions, and precision livestock technologies. These research programmes integrate conventional livestock science with emerging approaches in reproductive biotechnology, molecular biology, genomics, bioinformatics, artificial intelligence, computer vision, sensor-based monitoring, and data-driven livestock management to develop scientifically validated and field-adaptable technologies for yak production systems. The Centre develops and validates technologies for semen evaluation, cryopreservation, artificial insemination, estrus synchronization, fertility enhancement and assisted reproduction, thereby facilitating genetic improvement while reducing the logistical constraints associated with conventional bull exchange in remote and high-altitude regions. Research on nutrition, metabolic health, disease prevention, reproductive health and climate resilience further supports the development of productive and adaptive yak management systems.

The Centre also serves as an important platform for technology validation, capacity building and knowledge translation, linking laboratory- and farm-based research with field-level applications. Through collaborative research, farmer-oriented training, animal health programmes, technology demonstrations, germplasm dissemination and value-addition initiatives, ICAR–NRC on Yak contributes to the sustainable intensification of yak production, conservation of genetic diversity, livelihood security, and socio-economic development of pastoral and tribal communities across the Indian Himalayan Region, particularly in Arunachal Pradesh, Sikkim, Himachal Pradesh, and Ladakh. Its integrated research approach positions the Centre at the interface of high-altitude livestock biology, reproductive biotechnology, climate-resilient animal production, precision livestock farming and sustainable mountain development.

## Eligibility

Scientists, Assistant Professors, KVK-Subject Matter Specialists (SMS) or equivalent professionals working in the National Agricultural Research System (NARS) - including ICAR Institutes, State Agricultural Universities (SAUs), State Veterinary Universities (SVUs), Central Agricultural Universities (CAUs) and other allied fields are eligible to participate. Applicants should be actively engaged in research, teaching or extension activities related to the theme of the Short Course. Selection will be made according to criteria set forth by the ICAR guidelines. The total number of participants will be limited to 25.

**Venue : ICAR-National Research Centre on Yak**

Dirang, West Kameng District, Arunachal Pradesh-790101

**Date & Duration of Short Course :** 20<sup>th</sup>-29<sup>th</sup> January, 2027 for 10 days

## Application & Registration

Interested eligible candidates may apply through the prescribed online registration form & obtain approval from the competent authority.

1. Scan the QR code provided in the brochure to access Google registration form.
2. Fill in the personal and professional details accurately in the Google Form.
3. Upload a scanned copy of the duly approved application form available in this brochure and payment proof/receipt (PDF/Image).
4. After submitting the Google Form, participants should additionally email the duly approved application form to:  
shortcoursenrcy@gmail.com or yakdirector@gmail.com
5. Applications received after the prescribed deadline or without the required approved application form may not be considered.



## Important Dates

| PARTICULARS                                | DATE                            |
|--------------------------------------------|---------------------------------|
| Last date of receipt of Application        | 19 <sup>th</sup> December, 2026 |
| Intimation of Selection                    | 22 <sup>nd</sup> December, 2026 |
| Confirmation of participation by candidate | 27 <sup>th</sup> December, 2026 |
| Commencement of training programme         | 20 <sup>th</sup> January, 2027  |



Note : One selected, the candidate will be intimated through email to which they should promptly reply with firm acceptance & travel plan.

## Travel, Boarding & Lodging

The selected participants will be provided free boarding and lodging in the institute hostel/guest house. Food expenses will be borne by the organizers as per ICAR norms. All participants will be reimbursed for the to-and-fro travel fare for the journey to ICAR-NRC on Yak, Dirang, by rail or bus via the shortest route. The payment will be made as per the entitled class of travel, but restricted to the maximum of AC-II tier train fare (as per actuals). Local participants are not eligible for boarding and lodging; however, they will be provided lunch and inter-session tea. Participants are requested not to bring family members with them, as the institute has limited accommodation facilities. No DA will be paid to participants.

## Correspondence

### COURSE DIRECTOR

**Dr. Mokhtar Hussain**  
Senior Scientist (ARGO)  
Phone : 84150 11168

### CO-ORDINATORS

**Dr. Dinamani Medhi**  
Principal Scientist (AN)  
Phone : 84150 12269

**Dr. Vijay Paul**  
Principal Scientist (VPY)  
Phone : 84149 90193

### CO-COORDINATORS

**Dr. Martina Pukhrambam**  
Scientist (AGB)  
Phone : 82569 40041

**Dr. S. Loat**  
Scientist (ABT)  
Phone : 89507 73036

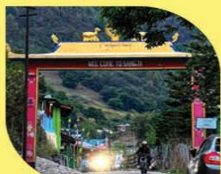
### ASSOCIATES

**Dr. Asish Debbarma**  
Scientist (LPM)  
Phone : 96127 50280

**Dr. Mansukh Singh Jatana**  
STO  
Phone : 84727 705110



## HIMALAYAN WEEKEND ESCAPE



Sangti Valley



Thupsung Dhargye Ling Monastery



Sela Pass



Tawang Monastery



Sangetsar Tso



Bum La Pass



Nuranang Falls



P.T. Tso



Tawang War Memorial



# ICAR- National Research Centre on Yak

Dirang, Arunachal Pradesh-790101

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On

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## APPLICATION FORM

(FULL IN CAPITAL LETTERS)

Name of the Applicant : \_\_\_\_\_

Designation : \_\_\_\_\_

Present Employer and Address : \_\_\_\_\_

Discipline : \_\_\_\_\_

Date of Birth : \_\_\_\_\_ Sex : (Male/Female) \_\_\_\_\_

Correspondence Address : \_\_\_\_\_

E-mail : \_\_\_\_\_ Mobile \_\_\_\_\_

Mobile : \_\_\_\_\_

Teaching / Research / Professional Experience : \_\_\_\_\_

Number of Courses attended in last 5 years : \_\_\_\_\_

Online Payment transaction ID : \_\_\_\_\_ for ₹50/- Date : \_\_\_\_\_

### Academic Record :

| Degree     | Discipline | Year | University |
|------------|------------|------|------------|
| PhD        |            |      |            |
| Masters    |            |      |            |
| Graduation |            |      |            |

Signature of the Head of the Institution  
(With Seal and Date)

Signature of the participants

### Registration & Payment



Pay the ₹50/- registration fees using the QR code provided and enter the payment details in the application form.

Scan & Pay ₹ 50/-

