सत्यमेव जयते

OPERATIONAL GUIDELINES FOR ESTABLISHMENT OF MAITRIS UNDER RASHTRIYA GOKUL MISSION

राष्ट्रीय गोकुल मिशन

MINISTRY OF FISHERIES AND FARMERS WELFARE ANIMAL HUSBANDRY & DAIRYING

DEPARTMENT OF ANIMAL HUSBANDRY & DAIRYING
KRISHI BHAVAN, NEW DELHI-110001

Contents

OPERATIONAL GUIDELINES FOR ESTABLISHMENT OF MAITRIS UNDER RASHTRIYA GOKUL MISSION

Introduction

Artificial insemination is important tool for enhancing milk production and productivity of bovines. After making several efforts AI coverage in the country is still limited to 30% of the breedable bovines and 70% of the breedable animals are covered through scrub bulls of unknown genetic merit. In developed nations 100% of the bovine population is under Artificial insemination coverage.

One of important impediment in extending AI coverage in the country is shortage of trained AI technicians. For effective AI coverage about 2,02,469 AI technicians will be required against this 1,16,586 AI technicians are available in the country leaving a gap of 90958 AI technicians.

The primary focus of the project is to enhance productivity of existing bovine population by increasing Artificial Insemination coverage through establishment of Multi Purpose Artificial Insemination Technicians in Rural India (MAITRIs) to deliver artificial insemination services at farmers doorstep on self sustainable basis through collection of cost of goods and services. Benefit of the project directly accrue to 90958 educated rural youth and about 8.12 crore farmers engaged in dairying will get indirect benefit in terms of increased productivity and milk production.

2. Objectives of the Project

The objective of the project is to:

(i) Provide quality training to educated rural youth to deliver artificial insemination services and veterinary first aid at farmers' doorstep on self sustainable basis.
(ii) Enhancing AI coverage from 30% to 70% of the breedable bovine females in a time bound manner;
(iii) Establishment of AI technicians through provisions of AI equipments/consumables after training

3. Rationale for Establishment of MAITRIs:

3.1 Shortage of trained manpower:

One of important impediment in extending AI coverage in the country is shortage of trained AI technicians with required skill. The States like Kerala, Tamil Nadu and Haryana have sufficient number of AI technicians as per requirement and AI coverage is more than 60% in these States even coverage in Kerala is more than 90%. For effective AI coverage about 2,02,469 AI technicians will be required with the assumption that each AI technician effectively covers 600 breedable bovine females per annum and performing 1000 AI per year at the rate 3 AI per day in all the States except in North Eastern States (NER) and Hilly States (Jammu & Kashmir, Himachal Pradesh, Uttarakhand) where AI performed by AI technician is assumed as 600 AI per year. Against this 1,16,586 AI technicians are available in the country leaving a gap of 90958 AI technicians (details are given at Annexure-I).

3.2 Delivery of Breeding inputs at Farmers doorstep:

3.2.1 It is difficult for farmer to take animal in heat to veterinary hospitals or dispensaries for artificial insemination. If animals are taken to veterinary hospitals/ veterinary dispensaries there are hormonal changes in animals as it comes under severe stress leading to poor or very poor conception rates. Therefore, it is essential that AI is delivered at farmers doorstep.

3.2.2 Most of the AI centres in the country are stationary AI centre or Government Hospitals or dispensaries managed by a single veterinarian/ veterinary assistant/ livestock assistant. These centres are unable to deliver AI services at farmers doorstep.

3.2.3 Farmer/labourer is going to lose entire day work in taking his dairy animals to veterinary hospitals/dispensaries for artificial insemination, thus lose interest in AI. This warrants that sufficient AI technicians may be established in the country to deliver quality AI services at the farmers doorstep.

3.2.4 Estrus cycle in case of dairy animals is of 21 days duration and after every 21 days animal comes into heat and only during the heat animal is inseminated, further, heat or estrus is of 24 to 36 hrs duration. Missing a single heat means that days open will be increased by 21 days leading to loss in milk production by 21 days as animal gives milk only after calving. Considering 30% of the dairy animals (cattle and buffaloes) are under AI coverage or 28.2 million animals in milk covered through AI missing one heat in these animals means loss in milk production to the tune of 2.91MMT, which has value of Rs 8705 crore (assuming market sale price of milk as Rs 30 per litre and average productivity of animals as 5.1 lts per animal per day) .

3.3 Quality of training:

3.3.1 In artificial insemination frozen thawed semen is deposited in to reproductive tract of the female that is in body of uterus at the right time of heat (mid heat). AI technicians with insufficient skills/quacks may cause injury to the reproductive organs and even may make animals permanently infertile.

3.3.2 Quality of AI technicians is important in attaining high conception rates and imparting artificial insemination services in sustainable manner. Therefore, training centres may have sufficient technical manpower and animals for conducting theoretical training and practical training of AI technicians.

3.3.3 Proper training of AI technicians following MSPs and SOPs is essential is important for delivery of AI services at farmers doorstep. Therefore AI technicians to be trained at accredited AI training institutes.

3.3.4 At present only 33 accredited AI training institutes are available with State Animal Husbandry Departments and Dairy Cooperatives. Thus there is a urgent need to rope in Veterinary Universities and Colleges to impart quality training to AI technicians. Institutes identified by ASCI will also be used for training of AI technicians.

3.4 National Animal Disease Control Programme:

3.4.1 Department has already initiated comprehensive National Animal Disease Control programme (NADCP) with an allocation of Rs 13343 crores for control and eradication of Foot and Mouth Disease and control of Brucellosis in the country. For animal identification and traceability all the animals covered under the programme (cattle, buffalo, sheep goats and pigs) are being identified and registered through ear tags with unique identification number. This will give further scope for enhancing trade of milk and milk products and other livestock products. In order to take benefit of NADCP there is need to implement artificial insemination programme for enhancing milk production and productivity.

4. Project:

4.1 The project will accomplish through training of MAITRIs at existing AI training institutes already accredited by Central Monitoring Unit of DAHD with State Animal Husbandry Departments, Dairy Cooperatives, reputed NGOs (BAIF and JK Trust) and National Dairy Development Board (NDDB). Minimum requirement for training institute is at Annexure-II and details of the accredited training institutes is given at Annexure-III

4.2 The Veterinary Universities (13)/ Veterinary Colleges (41) managing large breeding farms and sufficient number of animals for practical training may also be allowed to conduct training. Details of the veterinary Universities and colleges are given at Annexure-IV

4.3 After training AI technicians will be established as MAITRIs in their respective Gram Panchayats by providing AI equipments and maintaining regular delivery of AI consumables in the form of semen doses and liquid nitrogen. These technicians will be viable through recovery of cost of Artificial insemination services.

5. Target Segment/ Beneficiaries

5.1 The project will create direct employment opportunities for 90980 eligible educated rural youth.

5.2 The project aims at enhancing the Artificial Insemination (AI) coverage from present level of 30% to 70% over the next five years, ultimately increasing the productivity of the bovines (Cattle & Buffalo). The benefit of the project will accrue to 8.12 croe rural household engaged in dairy farming with very high proportion being small and marginal farmers and landless.

5.3 The project will also create the skilled manpower in the Veterinary sector and contribute in the mainstream economy of the country through the self employment of the educated rural youth. The value proposition of project provides doubling the milk production, self employment and achieving the aim of doubling the farmers' income.

5.4 Eligibility criteria for selection of trainee:

5.4.1 MAITRIs shall be chosen from unemployed educated rural youth so as to generate employment. These workers will be chosen from the local area, as they know the area and utility of the timely AI service.

5.4.2 Minimum education qualification: 10th Pass and minimum age for AI workers may be fixed at 18 years by EIA.

5.4.3 Preference shall be given to migrant workers

6. Curriculum and Standards:

6.1 Curriculum

MAITRIs will be trained using uniform training module developed and approved by DAHD. EIA/AITI will obtain approval of DAHD for making changes in the approved syllabus if any. Detailed curriculum is given at Annexure-V.

6.2 Duration of Training:

6.2.1 MAITRIs shall be trained at the accredited training institutes for duration of 3 months (1 month classroom training and 2 month practical training). During the training regular test and exams will be conducted by AITI at regular interval.

6.2.2 MAITRIs proposed to be established under by SIA/EIA/PIA will be multipurpose workers along with AI they will take up:

- veterinary first aid,
- vaccination,
- agent for livestock insurance,
- ration balancing,
- milk recording,
- data entry in national database,
- agent for distribution of fodder seeds root slips and stem slips etc.
- Demonstration on feed management, health management breeding management will also be conducted through MAITRIs under NPBB

6.3 Mobilization of Candidates:

A committee shall be constituted by District Veterinary officer of the concerned sate for selection of the candidates as per requirement in the district. Preference will be given to local educated unemployed rural youth and migrant workers returning home. Gampanchayats will be involved at all stages in the selection of trainee. Only candidates interested in working as MAITRIs will be selected.

6.4 Registration of Trained MAITRIs

6.5.1 After completion of training, certificate and Unique Identification Number (UID) will be issued to MAITRIs by the concerned training institute. All the MAITRIs with AI service providers will be registered by the concerned State Animal Husbandry Department.

6.5 Retraining/Refresher training of MAITRIs

If MAITRIs are found to be deficient in their skill, then they will be retrained at accredited training institutes for duration of 5 days. All MAITRIs will be retrained after every 3 year for duration of 5 days at accredited institutes.

7. Project Implementing Agency

The State Livestock Development Boards, State Department of Animal Husbandry, Dairy Cooperatives, NDDB Dairy Services, Veterinary Universities and veterinary Colleges will be End Implementing Agencies (EIAs). Funds under the project will be routed through State implementing Agency. The project will be implemented as a component of Rashtriya Gokul Mission.

8. Payouts:

8.1 Cost of Training

The cost of the training to be Rs 31,000/trainee for a minimum batch size of 30 trainee / batch with duration of training of 90 working days. The training include 1 month classroom training programme and 2 month practical training programme. The training cost per trainee will also include lodging and boarding of trainee, strengthening of training centre, consumables and printing of training modules in local languages. The breakup of the cost of training is given in the following table:

Item wise cost of training for a batch size of 100 trainee

S. No.	Item	Cost (in Rs)
1	Cost of training /Training Fee, including training manual, MSP and SOP for AI, consumables, slaughter house organs, management of farm, books and other documents	20, 000/ Trainee
2	Hostel fees for 3 months	3000/ Trainee
3.	Miscellaneous expenditure including management of library, strengthening training centre, water supply, electricity supply etc.	2000/ trainee
4.	Boarding grant for 1 month	Rs 6000/-
	Total	31000/ Trainee

8.2 Placement support for MAITRIs:

After completion of training AI workers will be established as MAITRIs under the scheme. Equipments costing Rs 50,000 per MAITRIs will made available. Item wise cost per trainee is given in the following table:

S. No.	Item	cost /Trainee
1.	Portable 3 lts biological cryocontainer with canisters and goblets	Rs 8000/ AIT
2.	Mother Cryocontainer @ 1 per 5 AI technicians; Rs 25000/container	Rs 5000 / AIT
3.	AI kit (AI gun with camera, straw holding forcep (tweezers), deep stick, straw cutter, thermos flask, digital unbreakable thermometer, Gum Boots, Apron, cap, kit bag, Gun holder, sheeth holder, scissors, castrator, trevis etc)	Rs 31000 / AIT
4.	Transport cryocontainer @ 1 per 5 AI technicians Rs 25000/container	Rs 6000 / AIT
	Total	50,000/ AIT

8.3 Post Placement support to MAITRIs:

8.3.1 Incentive admissible under Nationwide AI programme will also be made available to MAITRIs proposed to be established under the project.

8.3.2 Placement: After training MAITRIs are established as private AI technicians and free to collect cost of goods and services made available to farmers.

9. Viability of MAITRIs:

MAITRIs will be free to collects fee for AI, veterinary first aid, vaccination, distribution of fodder seeds, root slips, ration balancing, milk recording etc. If technician performs 1000 AIs in a year can earn around Rs 89500 in a year and Rs 7500 monthly exclusively from AI. Calculation for viability of AI technicians is depicted in the following table:

Income-Expenditure Profile and Viability of MAITRIs

Sl. No.	**Investment Details**	**Costs (Rs.)**	**Sl. No.**	**Income-expenditure Profile**	**Costs (Rs.)**
1	**Equipment from scheme of DAHD**	50,000	A	**Practice with Motor Bike Annual Income**	

a)	3 lit. LN_2 Container-I	10000	1	Service Fee for 1000 AI/year @ Rs 100/AI	100000
b)	35 lit. LN_2 Container-I	5000	2	Veterinary first aid, vaccination, milk recording,ration balancing AI incentives etc	40000
c)	Transport container	5000			
d)	AI Kit and Kit bag, AI container, sheath container, Gum boots, Apron, cap, tag applicator, deepstick, straw holding forcep, thermosflask, straw cutter, pair of scissors	20000		Total income	140000
e)	Trevis	10000		**Annual Expenditure**	
			1	Loan and Interest Repayment	17500
			2	Cost of Semen & LN2 @ Rs 20/dose	20000
	Mobility		3	Propulsion charges	12000
			4	Vehicle Maintenance	1000
5	Motor Bike (bank Loan)	65000		**Total Annual Expenditure.**	50500
6	Moped (bank Loan)	25000			
				Net Income(Living Income)	89500 or Rs 7458/PM
	Total Investments				
A.	Practice with Motor Bike	115000			
B.	Practice with Moped	75000	B	Practice with Moped	
				Annual Income	
			I	Service Fee for 1000 AI/year	100000
			2	Veterinary first aid, vaccination, milk recording, AI incentioves etc	20000
				Total	120000
				Annual Expenditure	
			1	Loan and Interest Repayment	3240
			2	Cost of Semen and LN2	20000
			3	Propulsion Charges	3500

			4	Vehicle Maintenance	1000
				Total Annual Expenditure	27740
				Net Income(Living Income)	92260 or Rs 7688 PM

Notes :

1. Service Fee for door-step delivery of AI reckoned at Rs.100/AI
2. Five Year Term Loans / Lease Finance with 12.5 % interest and repayment in 60 installments.
3. Assistance Package comprising the Equipment as a one time grant
4. Since stationary A.I. centres will continue to provide services and natural service system will be revamped, poor farmers are unlikely to be at a disadvantage because of promotion of MAITRIs.

10. Fund Flow under the project:

The funds will be released directly to the State Implementing Agency (SIA) and SIA in turn make payment to the EIAs on the basis of targets set under the project and achievements made by EIA. It will be the responsibility of SIA to submit utilization certificate and MPRs to DAHD.

11. Monitoring:

11.1 Central Level Monitoring By DAHD

11.1.1 State Implementing Agency/ Livestock Development Boards will constitute Technical Project Monitoring Committee (TMC) headed by Principal Secretary /Secretary State Animal Husbandry Department. Meeting of TMC will be organized after 3 month.

11.1.2 State will use Management Information System (MIS) to submit reports viz. Monthly Progress Report (MPR), and Quarterly Progress Report (QPR) to Government of India as per prescribed formats, within the stipulated time frame.

11.1.3 DAHD will depute its officers for monitoring of the project at State level.

11.1.4 Monthly progress reports and quarterly progress reports will be obtained from SIA

11.1.5 Account of EIAs will be open to monitoring under Rashtriya Gokul Mission

11.1.6 Third party evaluation of the project by an independent agency

11.2 State Level:

11.2.1 tate Animal Husbandry Department shall constitute a State level Monitoring Committee headed by Principal Secretary of the Department and its members should be stake holders in cattle and buffalo development.

11.3 Evaluation and accreditation of AI training institutes:

AI training institutes with the faculty and facility will be identified by SIA or SIA will conduct training immediately after identification. List of the training institutes identified for training by DAHD are given in the action plan

11.4 Registration of MAITRIs with AI service providers

MAITRIs will be registered and brought under the control of the AI service provider who will monitor performance of the AI worker, ensure maintenance of breeding records and recommend further re-training of the worker if the skills attained are not adequate.

11.5 Online Monitoring

Data on AI carried out by MAITRIs will be uploaded on INAPH data base. Performance of MAITRIs working in the field will be assessed by SIAs through INAPH data base.

Annexure-I

State wise AI technicians required for effective AI coverage

S No	State	Breedable Bovine Population	Animals available for AI annually	AI Centres	AI done in lakh	% of AI coverrage	AI to be performed for 70% AI coverage	AI Technician required	Gap
1	2	3	4	5	6	7	8	9	10
1	Andhra Pradesh	50.01	35.01	7,467	48.98	46.63	73.52	7352	0
2	Bihar	115.75	81.03	5,742	31.42	12.93	170.16	17016	11274
3	Chhattisgarh	37.32	26.13	2,651	7.19	9.17	54.87	5487	2836
4	Goa	0.43	0.3	101	0.33	36.67	0.63	63	0
5	Gujarat	99.2	69.44	8,940	81.43	39.09	145.82	14582	5642
6	Haryana	29.33	20.53	3,973	42.44	68.91	43.11	4311	338
7	Himachal Pradesh	13.15	9.21	3,124	10.22	36.99	19.34	3224	100
8	Jammu & Kashmir	16.08	11.26	1,947	13.62	40.32	23.65	3941	1994
9	Jharkhand	37.7	26.39	2,135	6.35	8.02	55.42	5542	3407
10	Karnataka	56.92	39.84	7,144	67.81	56.74	83.66	8366	1222
11	Kerala	6.9	4.83	2,903	13.42	92.62	10.14	1014	0
12	Madhya Pradesh	124.9	87.43	6,212	32.17	12.27	183.60	18360	12148
13	Maharshtra	88.28	61.8	6,787	48.37	26.09	129.78	12978	6191
14	Orissa	31.3	21.91	5,890	14.24	21.66	46.01	4601	0
15	Punjab	36.07	25.25	4,539	36.89	48.70	53.03	5303	763
16	Rajasthan	136.4	95.48	8,444	44.08	15.39	200.51	20051	11607
17	Tamil Nadu	50.57	35.4	8,970	68.26	64.27	74.34	7434	0
18	Telangana	36.7	25.69	3,643	17.74	23.02	53.95	5395	1752
19	Uttar Pradesh	242.06	169.44	14,357	157.81	31.05	355.82	35582	21225
20	Uttarakhand	13.09	9.16	1,443	6.93	25.22	19.24	3206	1763
21	West Bengal	72.28	50.59	7,020	39.81	26.23	106.24	10624	3604
	Total	1294.46	906.12	113432	789.51	29.04	1902.85	194433	85868
	NER States								
1	Arunachal Pradesh	0.8	0.56	50	0.01	0.60	1.18	196	146
2	Assam	24.1	16.87	1,911	4.36	8.61	35.43	5905	3994
3	Manipur	0.71	0.5	57	0.05	3.33	1.05	175	118
4	Meghalaya	3.14	2.2	55	0.25	3.79	4.62	770	715
5	Mizoram	0.2	0.14	70	0.06	14.29	0.29	49	0
6	Nagaland	0.22	0.15	243	0.27	60.00	0.32	53	0
7	Sikkim	0.66	0.46	156	0.18	13.04	0.97	161	5
8	Tripura	2.96	2.07	612	1.5	24.15	4.35	725	113
	Total	32.8	22.96	3154	6.69	9.71	48.22	8036	5090
	Grand Total	1327.25	929.08	116586	796.2	28.57	1951.07	202469	90958

Assumption: @ of 600 AI per technicians in NER and Hilly States and 1000 AI per technician in other States

Annexure-II

Required Standard Facilities at AI Training Institute

1. Class room facilities:

For a batch of 30 trainees, there should be a class room having minimum of 400 square feet area. If there are more than 30 trainees, there should be an additional class of 400 square feet area.

A laboratory having minimum 500 square feet area for practical classes is required. This laboratory should have facility to store reproductive organs, keep different models of animals and reproductive organs and space to keep semen and liquid nitrogen storage containers.

There should be a library and reading room having books and journals on cattle, breeding, indigenous breeds and dairy.

2. Teaching aids

The class room must have the following:

- Adequate chairs and tables for trainees
- White board
- LCD Projector
- Computer
- Charts and Models
- The centre must have the required quantity of semen doses and LN storage containers, AI guns, and required AI accessories.
- Reproductive organs must be obtained from a nearby slaughter house for palpation and passing a gun.
- Ear tags and ear tag applicators
- Measuring tape for estimation of body weight
- ICT aids (Computer, note books or PDAs, printers etc.,

3. Animal housing facilities for practical training

- For practice, the centre should have minimum one animal for six students.

- The centre may have its own animals for practical classes or tie up with nearby Gaushala or Panjarapol or slaughter house for practical training. Every trainee must pass AI gun in at least 20 animals during entire period of class room training.

- If the centre has its own animals, there should be a proper shed, a Trevis /an AI crate and a godown to store feeding material. Animals should be replaced every six months.

4. Lodging and boarding facilities for trainees

- The centre should have proper residential facilities for trainees including kitchen and minimum recreational facilities.

- The AI training Institutes may outsource the board and lodging facilities to an external agency through a formal agreement for at least a period of two years. The copy of the formal agreement should be kept for record for requirement at the time of Accreditation process.

5. Understanding with AI service providing organisations for practical training

- The Centre should have some formal arrangement with AI service providing organisations for its trainees to receive apprenticeship training for 60 days.

- During practical training each trainee should do minimum 75-100 AIs and the same numbers of P.D.s. The AI Centers having such work performance should be selected for apprenticeship training. The trainer of A.I. Technician should have enough experience (3 to 5 years) to impart practical training to trainee A.I. Technicians.

- Trainees should also get opportunities to address farmers meetings to develop confidence and do extension activity effectively.

6. Records/Documents for a AI training Institute

1) Trainees' records of registration

2) Trainees' daily attendance record

3) Records of successfully completed trainees

4) Summary of feedback obtained from trainees

5) Annual progress report / Training Brochure(optional)

Annexure-III

List of Accredited AI Training Institutes with State Governments/ Dairy Cooperatives/NGOs and their contact details

Sl. No.	State	Sl. No.	Name of AI Training Institutes	Place of AITI	Contact Address	Contacts (Mobile/ Email)
I	Bihar	1	COMFED AI Training Center	Patna	C/o Bihar State Milk Cooperative Federation Ltd Patna (COMFED) P.O: Bihar Veterinary College, Patna, Bihar: 800014	Dr. Brinda Prasad: 0–9473199967 comfedtrainingcentre@gmail.com Dr. Dinesh: 0–9471002619
II	Chhattisgarh	2	Dr. Vijaypath Singhania Training Institute for Rural Development	Bilaspur	P.O: Gopalanagar, Old Raymond Dairy, Near Lafarge Cement Plant Road, Tahsil: Akaltara, District: Janjgir, Champa, Chhattisgarh: 495663	Mr. S K Chandrakar: 0–7354150000 s.chandrakar@raymond.in Mr. Rakesh More: 0–9575302472
III	Gujarat	3	BAIF Institute for Sustaninable Livelihoods and Development (BISLD) Training Center for Artificial Insemination	Bharuch	BAIF KVK Campus Chaswad, Netrang, Bharuch, Gujarat: 393130	Mr. M M Patel: 0–8128691120 mahendra.patel@baif.org.in Mr. Lalit M. Patil: –09624151584 lalitpatil59@gmail.com
		4	Dudhsagar Research and Development Association	Mehsana	C/o Dudhsagar Dairy PO Box: 01, Cattle Feed Plant, Jagudan, Mehsana, Gujarat: 382710	Dr. S B Vyas: 0–8128673894 sbv@mehsanaunioun.coop Dr. S S Chaudhari: 0–8128673932
		5	Technical Training Institute	Morbi	Lilapar Road, Inside Government Gaushala Morbi, Gujarat: 363641	Dr. J. J. Dadhania: 0–9825056677 jdadhania23@gmail.com Dr. J. V. Patel: 0–9426225349 Jvpatel177@gmail.com
		6	State Frozen Semen Production & Training Institute	Patan	C/o Gujarat Livestock Development Board (GLDB), Ramnagar Road, Padmanava Char Rastha, Patan, Gujarat	Dr. A. B. Modi: 0–7573038378 sfsptigldb@gmail.com Dr. Shailesh J. Patel: 0–7573038372 sudampatel@gmail.com

Sl. No.	State	Sl. No.	Name of AI Training Institutes	Place of AITI	Contact Address	Contacts (Mobile/ Email)
IV	Haryana	7	Trainer's Training Institute	Hissar	Dhansu Road, Hissar, Haryana: 125001	Dr. Birender Singh Laura: 0–8901208885 principalhvti@gmail.com Dr. Ravinder Kumar: 0–9416546110
V	Karnataka	8	Dharwad Training Centre	Dharwad	Opposite NGEF, P. B. Road, Rayapur, Dharwad, Karnataka: 580009,	Dr. Ajiz: 0–9972163459/ 0–7760381074 kmftcd@gmail.com
		9	Central Training Centre	Bangalore	Adugodi Circle, Adugodi Bangalore, Karnataka	Dr. G. T. Gopal: 0–9513998803/ 0–7760964527 kmfcti@gmail.com
		10	Mysore Training Centre	Mysore	KMF Campus, Mysore, Karnataka	Sri Shivalingegowda: 0–9606012625/ 0–7760381074 kmfmystc@gmail.com
		11	Artificial Insemination Training Institute	Tiptur	C/o BAIF Institute for Sustainable Livelihoods and Development (BISLD), Kamadhenu, Post Box No. 3, Sharadanagara, Tiptur, Tumkur, Karnataka: 572202	Mr. Pandit G Patil: 0–9845843045 pandit.patil@baif.org.in Dr. I. I Hugar: 0–7798486509 iranna.hugar@baif.org.in
VI	Kerala	12	KLDB Training Centre	Dhoni	KLDB Training Centre, Dhoni Farm, Dhoni, Palakkad Kerala: -678009	Dr. Avinash Kumar R: 0–9446004283 avinashkldb@gmail.com
		13	KLDB Training Centre	Mattupatty	IndoSwiss Project Kerala–ISPK, Munnar, Idukki, Kerala: 685616	J. Karthikeyan: 0–9446004285 kldbseed@gmail.com Dr. Arunkumar: 0–9446004295
VII	Maharashtra	14	BAIF Institute for Sustaninable Livelihoods and Development (BISLD) Training Center for Artificial Insemination	Nashik	BAIF Mitra Bhawan, Opposite Niwas Homes, Behind Bodhale Nagar Nasik–Pune Highway, Nasik, Maharashtra: 422011	Dr. S H Shaikh: 0–9226925829 shabbiroddin.shaikh@baif.org.in Mr. S S Sahane: 0–9423070892 suresh.sahane@baif.org.in

Sl. No.	State	Sl. No.	Name of AI Training Institutes	Place of AITI	Contact Address	Contacts (Mobile/ Email)
		15	BAIF Artificial Insemination Training Institute	Urlikanchan–Pune	C/o BAIF Development Research Foundation, Central Research Station, Urlikanchan, Pune, Maharastra:412202	Dr. J R Khadse: 0–9421056712 jayant.khadse@baif.org.in
VIII	Mizoram	16	Artificial Insemination Training Institute	Selesih–Aizawl	C/o State Implementation Unit (SIU) Selesih, Aizawl, Mizoram	Director: 0–9436140996 directorvetymiz@gmail.com Deputy Director: 0–9436151207
IX	Orissa	17	Animal Husbandry Staff Training Institute & Extension Training Centre (AHDSTI & ETC)	Bhanjanagar	Pranidhan Prashikhyana Kendra Government of Orissa, Bhanjanagar, College Road, Orissa: 761126	Dr.Madhusudan Subudhi: Dy. Director MOB: +91 9437360145 Dr Ratnakar Rout: Asst. Director Mob no: 9437493017
		18	Livestock Inspector Training Centre (LITC)	Sambalpur	Chiplima, Sambalpur, Orissa	Dr Niranjan Sahoo: Dy Director Mob: 9337997774 Email: litcchiplima@gmail.com Dr Rajanikanth Rath: Asst Director (AH&VS) Mob: 8328886494
X	Punjab	19	Innovative Artificial Insemination Training Institute	Bhatinda	Mansa Road, Near Central University, Bhatinda, Punjab: 151001	Kuldeep Singh: 09466893693 0022.kuldeep@gmail.com Shekher Singh: 09215460444 sheoranshekher@gmail.com
		20	Northern Regional Demonstration and Training Institute	Jalandhar	GT Road Bypass, Near Verka Milk Union, Jalandhar, Punjab: 144008	Dr. Parag R Pandya: 0–9712951182 prpandya@nddb.coop Dr. N K Nanote: 0–9726425834
XI	Rajasthan	21	RSLM and TI	Jamdoli, Jaipur	Agra Road, Jaipur, Rajasthan	Dr. Ramji M L: 0–9414035982 rslmtijaipur@gmail.com
		22	Pashupalan Prashikshan Sansthan	Jodhpur	Near Police Line, Ratanada, Jodhpur, Rajasthan	Dr. Anjali Singh: 0–7597416616 ahdp31@gmail.com
		23	Government Animal Husbandry Training Institute	Kota	Ram Talai Maidan, Mokhapara, Kota, Rajasthan: 324006	Dr. Anil Sharam: 0–9414662244 ahdp38@gmail.com
		24	Government Animal Husbandry	Udaipur	Chetak Circle, Udaipur, Rajasthan: 313001	Dr. Rakesh Pokharna: 0–9460324828 ahdp47@gmail.com

Sl. No.	State	Sl. No.	Name of AI Training Institutes	Place of AITI	Contact Address	Contacts (Mobile/ Email)
			Training Institute			
XII	Sikkim	25	SLDB Training Centre	Gangtok	C/o Sikkim Livestock Development Board, Veterinary Complex, Besides Lottery Office, Deorali, Gangtok, Sikkim: 737102	CEO: 0–9832092256/ 0–9735327642 mgajmersanjay@gmail.com Dr. Nutan Subba: 0–9679917915
XIII	Tamil Nadu	26	Sourthern Regional Demonstration & Training Centre (SRDTC)	Erode	C/o NDDB, Vasavi College, Erode, Tamil Nadu: 638316	Shri M Govindan: 0–8281785966 mgovind@nddb.coop Dr. T P Aravinth: 0–9726425772
		27	Union Training Centre–AAVIN	Tirunelveli UTI–AAVIN	C/o TDCMPU Ltd, Reddiarpatty Road, Perumalpuram-Post, Tirunelveli, Tamil Nadu: 627007	Dr. K. R. Basu: 0–9994294571 basuramaswami@gmail.com
		28	Union Training Centre–AAVIN	Madurai	C/o Madurai District Cooperative Milk Producers Union, Sathamangalam, Sivagangai Main Road, Madurai, Tamil Nadu: 625020	General Manager: 0–9442622232 aavinmadurai1@gmail.com Manager: 0–9489619042
		29	Union Training Centre–AAVIN	Salem	C/o Salem District Cooperative Milk Producers Union, Sithanur, Thalaivapatty, Salem, Tamil Nadu: 636302	Dr. S Sathya: 0–7373048418 brgslmaavin@gmail.com Dr. M. Surya: 0–7373704829 Dr. P S Keerthana: 0–7373704811
XIV	Telangana	30	Regional Animal Husbandry Training Center (RAHTC)	Karimnagar	Karimnagar, Telangana: 505001	Dr. S. Sridhar: 09110371603 rahtckarimnagar@gmail.com
XV	Uttarakhand	31	ULDB Training Centre	Rishikesh	C/o Uttarakhand Livestock Development Board, Training Centre, Pashulok,	Dr. G D Joshi: 0–7895276068 gdjoshi24@gmail.com Dr. Rajesh Kumar Sharma: 09720504071

Sl. No.	State	Sl. No.	Name of AI Training Institutes	Place of AITI	Contact Address	Contacts (Mobile/ Email)
					Rishikesh, Uttarakhand: 249203.	
XVI	Uttar Pradesh	32	BAIF Artificial Insemination Training Institute	Raniganj, Pratapgarh	BAIF Bhawan, Raniganj, Dist-Pratapgarh, Uttar Pradesh: 412 202	Dr. Raviraj Jadhav: 0–7897993110 raviraj.jadav@baif.org.in Dr. Anoop Singh: 0–8114018988 anoop.singhvo@baif.org.in Sanjeev Chanda: 0–7897993014 sanjeev.chanda@baif.org.in
XVII	West Bengal	33	Eastern Regional Demonstration and Training Centre (ERDTI)	Siliguri	C/o NDDB, Matigara, Near Mother Dairy, Darjeeling, West Bengal: 734010	Dr. Srikant Sahoo: 0–9933375107 ssahoo@nddb.coop Dr. Kamlesh Prasad: 0–7001978069

Annexure-IV

List of Recognized Veterinary Colleges Universities

Sl. No	State	Sr.	Name of University	Name of College
1.	ANDHRA PRADESH	1.	Sri Venkateswara Veterinary University, Tirupati	1. College of Veterinary Science, Tirupati
				2. NTR College of Veterinary Science, Gannavaram
				3. College of Veterinary Science, Proddatur
2.	ASSAM	2.	Assam Agricultural University, Jorhat	4. College of Veterinary Science, Guwahati
3.	BIHAR	3.	Bihar Animal Science University, Patna, Bihar	5. Bihar Veterinary College, Patna
4.	CHHATTISGARH	4.	Chhattisgarh Kamdhenu Vishwavidyalaya, Anjora, Durg	6. College of Veterinary Science & Animal Husbandry, Durg
5.	GUJARAT	5.	Anand Agricultural University, Anand	7. College of Veterinary Science and Animal Husbandry, Anand
		6.	Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar	8. College of Veterinary Science and Animal Husbandry, Sardarkrushinagar
		7.	Navsari Agricultural University, Navsari	9. College of Veterinary Science and Animal Husbandry, Navsari
		8.	Junagadh Agricultural University, Junagadh	10. College of Veterinary Science and Animal Husbandry, Junagadh
6.	HARYANA	9.	Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar	11. College of Veterinary Science, Hisar
				12. International Institute of Veterinary Education and Research, Rohtak ** ***(The college is under the Pvt. Sector)***
7.	HIMACHAL PRADESH	10.	CSK Himachal Pradesh Krishi Vishwavidyalay, Palampur	13. Dr. G.C. Negi College of Veterinary and Animal Sciences, Palampur
8.	JAMMU & KASHMIR	11.	Sher-e Kashmir University of Agricultural Sciences & Technology, Jammu	14. Faculty of Veterinary Sciences & Animal Husbandry, Jammu
		12.	Sher-e Kashmir University of Agricultural Sciences & Technology, Srinagar	15. Faculty of Veterinary Sciences & Animal Husbandry, Srinagar, Kashmir
9.	JHARKHAND	13.	Birsa Agricultural University,	16. Ranchi College of Veterinary

Sl. No	State	Sr.	Name of University	Name of College
			Ranchi	Science and Animal Husbandry, Ranchi
10.	KARNATAKA	14.	Karnataka Veterinary, Animal & Fisheries Sciences University, Bidar	17. Veterinary College Hebbal, Bangalore
				18. Veterinary College Nandinagar, Bidar
				19. Veterinary College, Hassan
				20. Veterinary College, Shimoga
11.	KERALA	15.	Kerala Veterinary and Animal Science University, Pookote	21. College of Veterinary & Animal Sciences, Thrissur
				22. College of Veterinary and Animal Sciences, Pookote
12.	MADHYA PRADESH	16.	Nanaji Deshmukh Veterinary Science University, Jabalpur	23. College of Veterinary Science & Animal Husbandry, Jabalpur
				24. College of Veterinary Science & Animal Husbandry, Mhow
				25. College of Veterinary Science & Animal Husbandry, Rewa
13.	MAHARASHTRA	17.	Maharashtra Animal & Fishery Sciences University, Nagpur	26. Bombay Veterinary College, Mumbai
				27. Nagpur Veterinary College, Nagpur
				28. College of Veterinary & Animal Sciences, Parbhani
				29. K.N.P. College of Veterinary Sciences, Satara
				30. College of Veterinary & Animal Sciences, Udgir
14.	MIZORAM	18.	Central Agricultural University, Imphal	31. College of Veterinary Science & Animal Husbandry, Aizawl, Mizoram
15.	ODISHA	19.	Orissa University of Agriculture & Technology, Bhubaneswar	32. College of Veterinary Science and Animal Husbandry, Bhubaneswar
16.	PUDUCHERRY	20.	Pondicherry University, Puducherry	33. Rajiv Gandhi College of Veterinary & Animal Sciences, Puducherry
17.	PUNJAB	21.	Guru Angad Dev Veterinary and Animal Sciences University	34. College of Veterinary Science, Ludhiana
				35. Khalsa College of Veterinary and Animal Sciences, Amritsar ***(The college is under the Pvt. Sector)***
18.	RAJASTHAN	22.	Rajasthan University of Veterinary & Animal Sciences, Bikaner	36. College of Veterinary and Animal Science, Bikaner
				37. Arawali Veterinary College, Sikar ***(The college is under the Pvt. Sector)***
				38. Mahatma Jyotiba Fule College of Veterinary & Animal Science, Chomu, Jaipur ***(The college is under the Pvt. Sector)***
				39. College of Veterinary and Animal Science, Navania, Udaipur
19.	TAMIL NADU	23.	Tamil Nadu Veterinary & Animal	40. Madras Veterinary College,

Sl. No	State	Sr.	Name of University	Name of College
			Sciences University, Chennai	Chennai
				41. Veterinary College and Research Institute, Namakkal
				42. Veterinary College and Research Institute, Orthanadu
				43. Veterinary College and Research Institute, Tirunelveli
20.	TELANGANA	24.	P.V. Narsimha Rao Telangana Veterinary University, Hyderabad	44. College of Veterinary Science, Hyderabad
				45. College of Veterinary Science, Korutla
21	TRIPURA	25.	Tripura University	46. College of Veterinary science & Animal Husbandry
20.	UTTAR PRADESH	26.	Narendra Deva University of Agriculture & Technology, Faizabad	47. College of Veterinary Science and Animal Husbandry, Faizabad
		27.	Uttar Pradesh Pandit Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavidyalay Evam Go-Anusandhan, Mathura	48. College of Veterinary Science and Animal Husbandry, Mathura
21.	UTTARAKHAND	28.	Govind Ballabh Pant University of Agriculture & Technology, Pantnagar	49. College of Veterinary & Animal Sciences, Pantnagar
22.	WEST BENGAL	29.	West Bengal University of Animal & Fishery Sciences, Kolkata	50. Faculty of Veterinary & Animal Sciences , Kolkata

Annexure-V

Curriculum and course content for AI technician training

A. Duration of training

1) AI basic training:

- Class room training along with practical training: 30 days
- Practical training in the field with AI service provider: 60 days

2) AI refresher training:

- Classroom and Practical training -- 7 days

B. Admission norms:

1. AI Basic Training:

The participant of this programme should have at least passed in 12th standard examination with not less than 18 years of age.

2. AI Refresher Training:

The participant of this programme should be a practicing AI technician having at least 1 year relevant work experience and should have undergone AI Basic training.

C). Class Room:

1) Different breeds of cows and buffaloes and their production and reproduction parameters

2) Conservation and development of indigenous breeds through selective breeding.

3) Benefits of Crossbreeding and genetic improvement of dairy animals

4) The existing State Breeding Policy and its enforcement.

5) Introduction to AI, and its importance, role of AI in genetic upgradation across nations, Natural Service (NS) vs AI, advantages and limitations.

6) External and internal body parts of a dairy animal and their function

7) Male reproductive organs & their functions

8) Semen, its collection, evaluation, processing, preservation

- different types of semen packing,
- structure of mini and medium straws
- information printed on straw and its importance
- Breed wise Straw colour codes

9) Female reproductive organs & their functions

10) Oestrus cycle:
    - Internal and external symptoms at different stages of oestrus cycle
    - Correct time of insemination
    - Determinants of first AI in heifers
    - Methods of heat detection in cattle and buffaloes

11) Normal reproductive cycle

12) Puberty, Maturity, Breeding, Fertilization, Implantation, Gestation and Calving

13) Ideal calving interval

    - Service period, dry period and Inter-calving period

14) Process of insemination:

    - Collecting History
    - Standard Operating Procedure (SOP)

15) Importance of:

    - Proper method of semen withdrawal from container
    - Proper thawing
    - Proper preparation of AI gun
    - Proper site of semen deposition
    - Care of animal during & after insemination

16) AI equipment and accessories & their care

17) Liquid nitrogen handling:

    - Structure of LN container
    - Handling & care of LN container
    - Precaution in handling of LN
    - Different models of LN containers
    - Importance of maintaining cold chain and LN refilling schedule.
    - Proper LN level in container & its checking. Evaporation rates and refilling interval of commonly used containers in the field under normal working conditions.
    - LN conservation measures

18) Pregnancy Diagnosis

19) Methods of calculating conception rates and factors affecting conception rates

20) Method of drying of animals on completion of 7th month pregnancy.

21) Common reproductive disorders/ diseases, repeat breeding, causes of abortion, etc.

22) Measures to obtain maximum fertility

23) Ear tagging , importance of record keeping, recording formats and submission of records into the INAPH application(offline & online versions) through

24) PDA/Netbook/Desktop (training in data entry with dummy data on test server, different flash messages, saving the data,synchronization of data with the server and using action reports in day to day work.

25) Starting an AI centre

26) Method of non-surgical castration

27) Care and management of new born calf and heifers till it becomes pregnant at farmers perception.

28) Care and management of Dry Pregnant animals

29) Care and management of animals before and after calving, precautions at the time of calving and use of naval kit for disinfection of naval cord

30) Importance of Animal housing and general management in getting full expression of genetic capability

31) Importance of bio-security measures to be adopted during AI.

32) Economically important diseases and their prevention through timely vaccination; various available vaccines; vaccination schedules; importance of maintaining cold chain

33) Basic aspects of nutrition and concept of Ration Balancing

34) Importance of proper nutrition including feeding of vitamins and mineral mixtures and deworming in fertility management with emphasis on the adverse impact of macro and micronutrients deficiencies on fertility status/reproductive health of animal.

35) Vaccination schedule for FMD, HS, BQ, Brucellosis and Anthrax (in Karnataka and Assam)

36) Veterinary first aid

37) Hygiene clean milk production and prevention of mastitis

38) Importance of Animal Insurance; various insurance schemes

39) Various government schemes in the dairy sector: DEDS, NPBBD and NDP.

D. Case Studies

1) Advantages of AI over natural service.

2) Advantages of following SOP for AIT-better conception rate and its impact over a period of five years.

3) Record keeping and using INAPH.

4) Extension activities related to animal husbandry (activities on Breeding, Health and Nutrition).

5) A farmer coming to AI Worker with an animal for insemination with following history of oestrus:

    - 3rd day after heat,
    - On the day of full moon
    - Just on the time of starting of heat
    - Animal with pustular/watery/bloody vaginal discharge.
    - Gestational heat
    - Post partum heat after one month of calving.
    - Heifer in heat with lower body weight.

6) Care of young calves till its pregnancy

7) Effect/impact of good AI technician Vs inefficient AI technician

8) Superstitious believes Vs Scientific method of breeding
9) Any new case study relevant to the case study as approved by Principal of the concerned AITI.

E. Audio Visual materials:

1) Animal reproduction and AI

2) Changing lives

3) DO and DONOT of AI

4) Hygienic milk and milk product processing and packagining

5) Year round fodder production

6) Animal health care (Diagnostics for control and eradication of diseases – FMD, HS, PPR, and avian diseases)

7) Improving quality and utilization of poor quality roughages

8) Mineral mixture for increased animal productivity

9) Organic farming for sustainability and profitability

10) Any other material relevant to the course content as approved by the the Principal of the concerned AITI.

F. Practical

1) Identification of different female reproductive organs on morbid Genitalia

2) Palpation of female genitalia in a Phantom box and passing of AI gun

3) Structure of LN container:
   - different models
   - handling & care
   - checking LN level

4) AI equipment & accessories:
   - handling & care including sterilisation

5) Palpation of female genitalia in live animal

6) Passing of AI gun in live animals

7) Demonstration of:
   - proper method for withdrawal of straw from containers
   - proper thawing procedure
   - proper preparation of gun
   - correct site of semen deposition

8) Pregnancy diagnosis at 90 days & beyond

9) Ear tagging

10) Record keeping and INAPH

G. Study visits

Study visits to any of the following places within/outside the State as deemed appropriate, by the AI training Institutes:

- AI Centre
- Cattle Feed Factory(optional)
- Dairy Farm
- Exhibitions and Krishimela/Pashumela (optional)
- Semen Station
- Dairy processing plant
- Fodder farm/Demonstration farms

H. Faculty profile and requirement (for a batch size of 30 trainees)

1. Veterinary Officers:

Minimum two Veterinarians are required with educational qualification of BVSc & AH and 3 years of work experience in AI, Breeding, Health and Management of Cows and Buffaloes along with experience in providing on the job practical training and delivery of lectures.

2. Support Staff:

Minimum one support staff is required with graduation in any discipline

I. Tests during Training:

Class Room Training:

- Fortnightly written test on topics covered.
- Final written test at the end.
- Final practical test to evaluate the skills learnt

J. Pass marks:

- Minimum three theoretical tests and one practical test may be conducted.
- Minimum 50% in each of the test including the final tests.