



# Uttarakhand Livestock Development Board

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## Proposal for Field Embryo Production Program

- Aim:** The objective of the field Embryo transfer (ET) program is to harness elite germplasm available at the farmer door step or at government farms. Due to awareness among farmers, there is increase demand for elite indigenous germplasm. They want more offspring from their elite cows. The field ET program will provide the platform for production of more offspring from their elite indigenous cow and therefore increase in the productivity per se. Embryo production at farmer door step will help in creating elite replacement herd of the farm, bio diversity and high genetic merit bulls for semen station. The sorted semen will be used to produce the sorted embryos. Initially first two years will be taken as pilot study and therefore around 5 to 10 donors will be selected each year.
- Who are eligible:**
  - Elite indigenous donor cows of the farmers in Uttarakhand
  - State Government farms with indigenous cattle breeds across the Country
  - Central Government farms with indigenous cattle breeds across the Country.

The production criteria for eligibility of donors will be as below:

A. The milk production approved in field performance recording or PT as approved by the local government veterinarian should be considered to check the lactation yield. The lactation yield of donor must be **500 Kg above the breed MSP** set by Government of India for bull procurement for semen station. If animal is not under field performance or PT program, then minimum of 3 days (morning and evening) milk recording will be taken by ET team and the per day average of last two days milk will be considered. The minimum criteria breed wise is as below:

S. No.	Breed	Minimum Average per day yield (Kg)
1	Red Sindhi	12 Kg
2	Sahiwal	15 Kg
3	Gir	15 Kg
4	Tharparkar	12 Kg
5	Badri	6 Kg

- Animal should be true to the breed.
- Animal should be free from Brucellosis, TB and JD. Farmer must allow disease testing of the donor cow. He should also allow Milk testing.
- Donor and recipient animal should be cyclic by reproduction and should not be infertile at any circumstances.

The lactation yield of donor must be **1000 Kg above the breed MSP** set by government of India for bull procurement for semen station. If animal is not under field performance or PT program, then minimum of 3 days (morning and evening) milk recording will be taken by ET team and the per day average of last two days milk will be considered. The minimum criteria breed wise is as below:

S. No.	Breed	Minimum Average per day yield (Kg)
1	Red Sindhi	15 Kg
2	Sahiwal	18 Kg
3	Gir	20 Kg
4	Tharparkar	15 Kg
5	Badri	8 Kg

3. **Different Embryo Transfer Programs Proposals :** There will be three proposals :-
- A. Production of sorted embryos from elite cow of farmers and transfer of fresh embryos at farmer door step.
  - B. Production of sorted embryos elite cow of farmers at farmer's door step and embryos will be owned by ULDB will be brought to farm.
  - C. Production of sorted embryos from elite of the elite cow and recovered viable embryos will be transferred to recipient of the farm. The farmer will be given 50% of the female calves produced at three months. Male calves will be property of ULDB.
4. **Advertisement of the ET Programs Proposals:** The proposals will be advertised in the Web site of the ULDB/AHD and Social Networking sites of the department of Animal Husbandry. The applications will be invited. The applications will be scrutinized and the framers will be apprised with different proposals and the final decision will be taken considering the various parameters such as location of the donor cow, milk production data, reproductive status and willingness of the farmer.

**5. Plan of work:**

- a) Application will be invited from farmer or state /central government farms.
  - b) The local government veterinarian nearest to donor cow house must be contacted by farmer. Short listing of the farmer's application as per the fixed criterion by ET team. The farmer will be intimated for selection and he has to provide Donor form and Recipient forms filled and signed by local Veterinarian. The assisting Veterinarian in the field will be given honorarium Rs. 4000 per donor flush and 5 final recipient selected.
  - c) The donor cow production and reproductive status will be provided by the local veterinarian in writing.
  - d) For embryo production human resources required are as follows: ET expert -Veterinarian, Three attendants, ET van with one driver and one local veterinarian. The ULDB will bear the expenditure incurred in the payment of wages of the Driver and attendants of the ET Van and Fuel of ET Van.
  - e) The ET team will visit to donor cow and finalize the donor and its embryo production and recipient synchronization protocol. The boarding lodging and transport of the ET team will be borne by ULDB.
  - f) The Hormones for superovulation and synchronization will be given to local vet with the consent of farmer and the program will be started. The AI on day of heat will be conducted by local Vet with the designated semen made available either by farmer or local vet or ET team.
  - g) The ET expert will visit on 6th day post AI at the site of donor cow and check for superovulatory response and recipients that are synchronized. The small Lab/ET Van will be set up at farmers home.
  - h) Day 7th post AI the donor cow will be flushed. Embryos will be collected, washed graded and loaded in the ET straws. The Embryos will be either transferred fresh at farmers door step or taken to the farm for fresh transfer or frozen for future use.
  - i) Since the conception in fresh embryo transfer are much higher than that of frozen, therefore every attempt will be made for fresh transfer of the flushed embryos rather than going for freezing.
  - j) Selection of donor will be finalized by ET expert of the team.
  - k) ULDB ET team will visit minimum of 3 times to donor site.
    - i. Selection of donor, milk recording, tagging and disease screening /Day before start of superovulation program
    - ii. Day of flushing and embryo transfer
    - iii. Calf verification
6. **Agreement:** Before final selection the farmer has to sign the agreement with the ULDB. The expenditure on one donor till embryo production and recipient synchronization including transport is around Rs 40000.00. Around 70 % cost of calf production cost by ET is shared by Recipient selection and their management till calf born.

<b>Proposal No.</b>	<b>Detail</b>	<b>Description</b>
A	Production of embryos from elite cow of farmers and transfer of fresh embryos at farmer door step in recipients arranged/owned by farmer owing donor cow.	For farmers- All ET expenses born by ULDB within territory of Uttarakhand. Outside Uttarakhand organization having donor animal will bear the transport, boarding and lodging expenses of the ET team for all the visits. Donor and recipient management expenses born by farmer. <b>OUTCOME -</b> Farmer must provide disease free bull calves born out of ET at 3 completed month to ULDB at a price policy of ULDB based on health and body score. The disease free female calves can be purchased by ULDB for induction in the farm with the price fixed by Farmer and ULDB together. The extra embryos left after all available and eligible recipients provided by farmer get utilized, will be property of ULDB. <b>For Government farms (State or central) -</b> All ET expenses born by ULDB. Donor and recipient expenses born by government farm bearing donor and recipients. 50 % Sharing of ET born male and female calves both. Veterinarian at government farm will not be provided honorarium.
B	Production of embryos elite cow of farmers at farmer's door step and recovered viable embryos will be property of ULDB	All ET expenses born by ULDB. Donor management expenses born by farmer /government farm. <b>OUTCOME -</b> The farmer will be given Rs 10000.00 per flush till recovery of viable embryos ranging from 0 to 5 viable embryos. After 5 viable embryos farmer will be provided with Rs 1000 /embryo extra. All embryos will be borne by ULDB. He will be provided payment through NEFT/RTGS within one month of flushing.
C	Production of embryos from elite of the elite cows of the farmer	All ET expenses born by ULDB. Donor management expenses born by farmer /government farm. Recipient will be of ULDB <b>OUTCOME -</b> The farmer will be given 50% of the female calves produced at three months. Male calves will be property of ULDB.

**Monitoring team for finalizing the Donor selection**

1. CEO, ULDB
2. Procurement Officer, ULDB
3. ET In-charge of Embryo Transfer Lab, Kalsi

## Agreement

Between

Uttarakhand Livestock Development Board, Dehradun, Uttarakhand (1st Party)

and

Name of farmer or Institution ----- (2nd Party)

This Agreement is made at place of farmer, on this ..... day of ..... 2019 between 1st party having head office at Pashudhan Bhawan, 1st Floor, Mothrowalla, Dehradun, of Uttarakhand which expression shall unless the context otherwise admits, mean and include its successors and assigns) and the 2nd Party ..... (hereinafter called Farmer/ Institution which expression shall unless the context otherwise admits, mean and include its successors and assigns).

ULDB has initiated a program on production of purebred calves through embryos of indigenous breed of Cattle. The ULDB will collect embryos from farmer's Elite Animals (called as Donors) and recovered live embryos will be transplanted to ordinary herd (called as Recipients) finally selected by ULDB.

Whereas

### **ULDB shall:**

1. Provide materials required for programming donors and recipients, Frozen Semen Doses free of cost for AI/ ET in the field and guide and advise farmer in implementing the activities and achieving project goals.
2. Carryout milk recording to identify elite animals.
3. Identify and ear tag the animals covered under the project.
4. Disease testing of animals covered under the project and their herd mates.
5. Recording of reproductive organs condition like suitability of cervix, uterus and ovaries etc.
6. Synchronization of donors and recipients for embryo transfer.
7. Transferring embryos in the selected recipients at ULDB Selected farms/animals (other than donor).
8. Following up the recipients for pregnancy.
9. Allow recipient owner to retain the female calf born.
10. Purchase the male calf from the recipient owner after selection at a cost as per the purchase policy of ULDB.

### **Farmer/ Institution (Donor / Recipient owner) shall:**

1. Select the open animals in their herd which they are willing to use for Embryo Transfer (ET) work.
2. Allow ULDB officers to examine their animals and take samples for disease testing and ear-tag the animals for identification of donor and recipients.
3. Arrange for good management of the elite animal.
4. Record the breeding behavior like estrus signs, duration of estrus and any other behaviour during normal/induced oestrus.
5. Not sell the donor and recipient animal, which is used for synchronization/superoovulation and embryo transplantation.
6. Should make contacts with local government veterinarian or veterinarian of the state or central government farm who will be willingly able to fill Performa's of donor and recipient selection, milk recording, disease testing.
7. Must provide all Performa's regarding donor and recipients with the help of local vet.
8. Farmer must allow parentage verification of the calves born.
9. Farmer must provide assistance during flushing and recipient handling.

The Agreement period shall be initially for two months (usually single flush) for donors and one year for recipients pregnant by embryo transfer starting from the date and extended further on mutual agreement.

**Selection of proposal:** Farmer has to clearly mention the below ET program proposal he/she want to opt.

<b>Proposal No.</b>	<b>Description</b>
A	Production of sex sorted in vivo embryos from elite cow of farmers and transfer of fresh embryos at farmer door step in recipients arranged/owned by farmer owing donor cow. The disease free male calves and left over embryos will be property of ULDB. <b>For State/Central government farms 50 %</b> Sharing of ET born male and female calves both.
B	Production of sex sorted in vivo embryos from elite cow of farmers at farmer's door step farmers will be paid Rs 10000 per flush till 5 viable embryos and Rs 1000/embryo extra after 5 viable embryos . Recovered viable embryos will be owned by ULDB
C	Production of sex sorted in vivo embryos from elite of the elite cows of the farmer and transfer of embryos in the recipients at Animal breeding Farm, Kalsi and sharing of female calves born at farm.

I have opted for the proposal-----  
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The two parties have signed below, in the presence of the witness as mentioned.

1                      Signature & Seal

2                      Signature & Seal

\_\_\_\_\_  
Chief Executive Officer,  
Uttarakhand Livestock  
Development Board

\_\_\_\_\_  
Name and address of the Farmer/ Institution

**Witness**

**Witness**

(1)

(1)

(2)

(2)

## Application Form for Selection of Donor for Embryo Production

To,

Chief Executive Officer,  
Uttarakhand Livestock Development Board,  
Pashudhan Bhawan, Ist Floor,  
Mothrowala, Dehradun- 248001  
Uttarakhand

**Name of the Farmer/  
Institution  
Complete Postal Address**

**Contact No. and E mail ID  
Location of Donor Animal  
Nearest Government  
Veterinary Hospital  
Name of the Veterinary  
Officer  
Contact No. of Veterinary  
Officer**

**Detail of Donor:**

<b>Animal ID</b>	<b>Breed</b>	<b>Date of Birth and Age</b>	<b>No. of Lactation</b>	<b>Best Lactation Yield (in Kg.)</b>	<b>Last Calving Date</b>	<b>Last Heat Date</b>	<b>Current Production Status</b>

**Selection of Proposal: Proposal No. ....**

**Signature and Seal of Veterinary Officer**

**Signature of Farmer/ Head of Institution**

**Date:**