N-04003/18/2025-Cattle_Div.

भारत सरकार/Government of India

मत्स्य पालन, पशुपालन और डेयरी मंत्रालय/Ministry of Fisheries, Animal Husbandry & Dairying

पशुपालन एवं डेयरी विभाग / Department of Animal Husbandry & Dairying

कृषि भवन, नई दिल्ली/ Krishi Bhawan, New Delhi

Dated- 22nd July, 2025

Office Memorandum

Subject: Standard Operating Procedures (SOP) for implementing National Milk Recording Programme for Cattle and Buffalo

Please find enclosed herewith the Standard Operating Procedures (SOP) for implementing the National Milk Recording Programme (NMRP) for cattle and buffaloes through the State Livestock Development Boards.

2. Elite animals (top 10% of the population) identified through Surabi Chayan Shrankhla, along with other elite animals identified in your State, may be included under NMRP as per the attached SOP.

3. You are further requested to give wide publicity to the programme to ensure its effective and successful implementation.

(Dr. Bhushan Tyagi)
Joint Commissioner (RGM)

Distribution:

1. The Director of Animal Husbandry of all States and UT's
2. The Chief executive officers of the concerned States.

Copy for kind information to:

PPS to AS(C&DD)

Standard Operating Procedures (SOP) for implementing National Milk Recording Programme for Cattle and Buffalo

1. Rationale:

1.1 In dairy sector, performance recording of bovines forms an integral part of scientific animal husbandry practices for the ultimate benefit and further upliftment of socio-economic status of livestock owners. The performance comparison of various breeds in different geographical areas and in different conditions provide valuable information on breed compatibility, cost economics of production, impact of various interventions and policies required in various areas for enhancing productivity of bovines.

1.2 It also serves as the basis for selection of animals for scientific breeding to produce next generation offspring, expected to provide better profits to livestock owners though increased milk productivity. Progeny Testing (PT) and Pedigree Selection (PS) programmes implemented under Rashtriya Gokul Mission are source of animal-wise reliable performance data on milk production, milk composition and reproduction aspects of cattle and buffaloes. The data at present is used in selection programme and implementation of Genomic Selection for heifers and bulls.

1.3 However, PT/PS programmes have their practical limitation in geographical spread. They can exploit maximum benefit if larger reference population for various breeds of bovines is available.

1.4 National Milk Recording Programme (NMRP) is aimed to implement performance recording of bovines throughout the country, capturing untapped geographies, with wide scale/coverage, to address existing gaps and further improve our efforts for speedy productivity enhancement, ultimately benefitting livestock owners.

2. Objectives of the Programme

2.1 The main objectives of the National Milk Recording Programme are:

(i) To locate superior germplasm in breeding tracts/milk pockets.

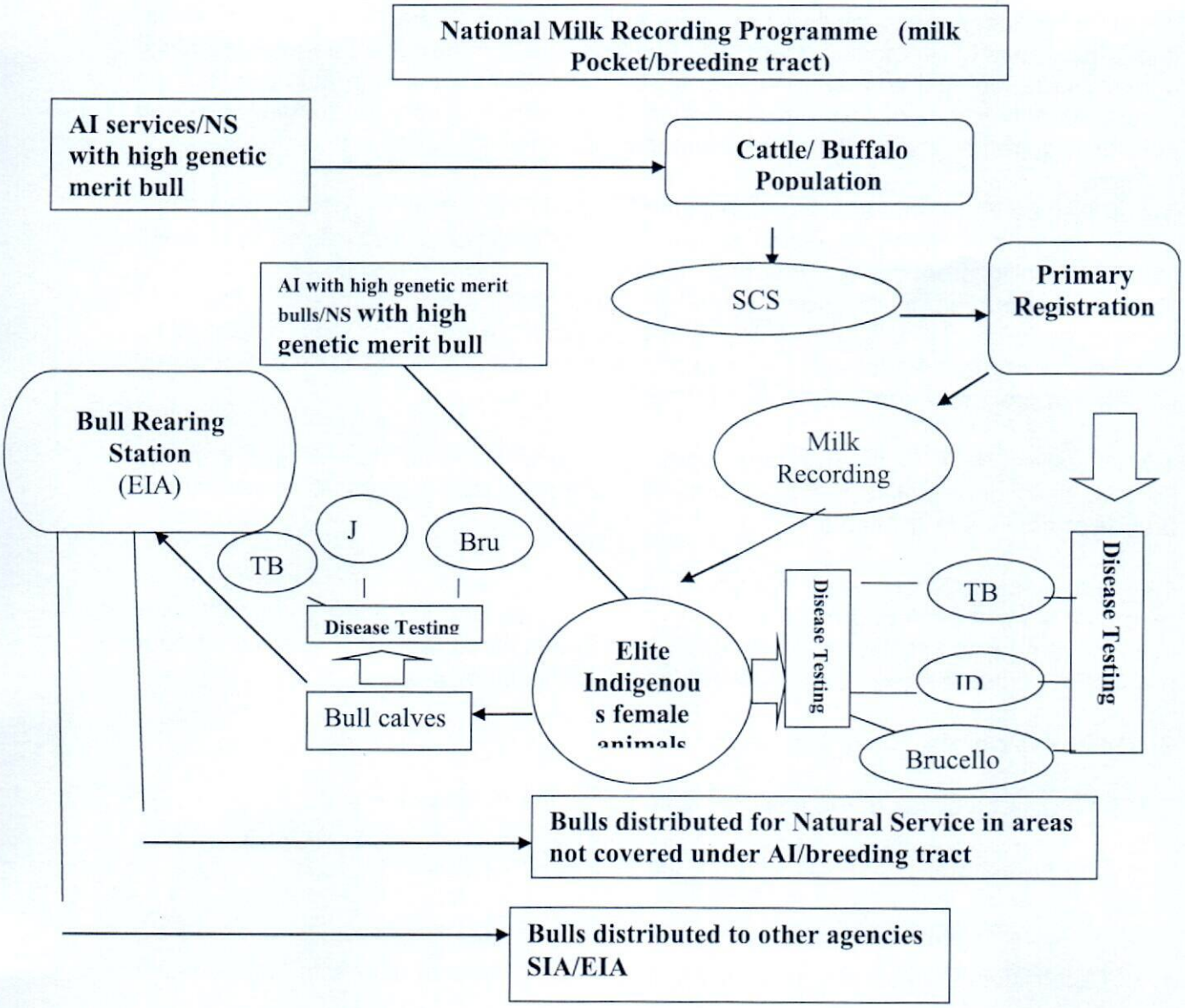
(ii) To introduce systematic milk recording and promote breeding with High Genetic Merit bulls.

(iii) To calculate genetic gain among bovines.

(iv) To collect and publish production and breeding records of registered animals.

(v) To create awareness among farmers and improve their income.

Figure 1: Schematic representation of the Technical programme



Implementing Agency

3.1 SLDB has been assigned the role of Implementing Agency (IA) for this project. SLBD will implement the project with the help of Participating Agencies (PA), like Milk Unions, State AHDs, ICAR institutions etc, that has its own AI/Milk recording network or is willing to establish recording network in the selected area. Participating Agencies (PA) and Project Area would be identified by SLDB based on Cattle and Buffalo breeds available in the area, milch animal population and existing network of an agency. CHRS of GoI will train the field personnel to undertake milk recording activity. SLDB will monitor the project activities in the field.

3.2 NMRP would be implemented across the country, PA would record milk yield following the Standard Operating Procedures (SOP) attached as Appendix-I. The PA will also arrange collection of blood samples from recorded females for future genomic selection activities.

4. Major Activities for the initiation of the project:

4.1 Identification of areas (up to districts/tehsils level) breeding tract of various breeds for establishing milk recording units on the basis of statistical sampling and so that data generated would be meaningful and statistically significant. Elite animals (top 10% of the animals) selected through Surabi Chayan Shrankhla may also be brought under scientific Milk Recording Programme

4.2 SLDB may select Suitable PA from the agencies working in the identified areas. SLDB organise meeting with PA to explain detail about the project, SOPs, fund flow mechanism monitoring mechanism, sample logistics, location for milk analysers, manpower recruitment etc.

4.3 If agreed, PA would prepare an action plan with clear physical targets and financial provisions and submit the same to SLDB.

4.4 The comprehensive action plan submitted to DAHD for approval. All the data of performance recording would be captured through Bharat Pashudhan Application. Funds will be release directly into the CNA account of SLDB and SLDB will release funds into the CNA account of PAs. Funds would be released for implementation as per RGM norms.

5 Operational area

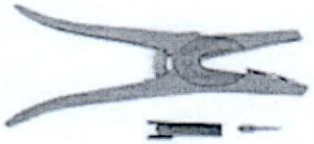
5.1 NMRP for a breed shall be taken up in a compact area/centre/village where at least 1000 breedable animals are available. In case of a cluster centre, only as many villages around the main centre where close follow up, milk recording, supervision and monitoring of the activities is possible shall be included in the programme.

6. Animal Identification

6.1 All animals enrolled under the project shall be identified by applying ear tags. Only polyurethane laser printed ear tags having a 12 digit number and a bar code shall be used. The numbering system followed shall be unique with the last digit of the number being a "check digit" to ensure that no two animals are tagged with the same number. Only numbers supplied by an agency identified by DAHD shall be used for unique identification of animals.

Figure A.1: Ear Tag

Figure A.2: Tag Applicator



6.2 The specifications for the ear tag shall be: The male tag as a button shall be with a minimum diameter of 27 mm with a metal point and the flag shaped female tag with a closed head shall be with a minimum size of 55 x 65 mm. 12 digits to be printed in two rows of six digits each; second/lower six digits shall be relatively much larger than first/upper six digits. The ear tag shall be applied inside the ear of animals, in the center of the ear lobe with the female part of the tag inside the ear.

Figure A.3: Ear Tagged animal

If the ear tag falls off, a new ear tag shall be applied within 10 days and the information shall be immediately updated.

7. Information System.

7.1 All data related to NMRP shall be captured through Bharat Pashudhan.

8. Milk Recording

8.1 The key points to be considered for milk recording include:

(i) Animal in any lactation may be considered for inducting under milk recording.

(ii) Preference may be given to farmers having larger herd size. In such case, all animals in his herd shall be recorded.

(iii) Preference shall also be given to younger animal rather than very aged/diseased animal (either currently or in the past),

(iv) The milk recording work shall be assigned to exclusive milk recorders (MAITRIs/ A Help/ Paravets) who have no other assignments during milk recording timings.

(v) An area assigned to one milk recorder would depend on the number of animals under milk recording and the spread of animals.

(vi) First recording shall be carried out on or after 5 days of calving and not later than 25 days of calving.

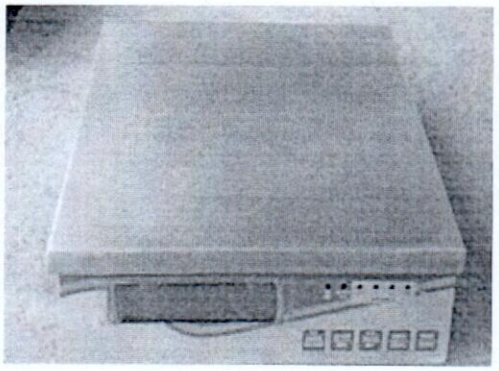
(vii) Milk recording for an animal shall be done once a month, morning and evening on the same day (also in the afternoon if three times milking is practiced) preferably on a fixed day of the month (plus or minus 5 days) at the place of milking.

(viii) A monthly milk recording schedule shall be prepared, detailing the animal to be recorded, order of recording, name, address and contact number of the farmer, name of the village, date and time of recording.

(ix) Milk recording shall be carried out using a GPS enabled Smart weighing scale (SWS) or weighing scale that can transmit data to mobile device having BharatPashudhan application directly. Total quantity of milk produced by the animal at farmers' household shall be weighed using the SWS along with GPS Coordinates (Latitude and Longitude). Captured data shall be forwarded to Bharat Pashudhan application.

(x) Alternatively if GPS enabled smart weighing scale is not available milk may be weighed using spring balance (weight of can with milk – weight of empty can) already made available in the kit provided to A help/ available in veterinary hospital. Milk Recorder may take photo through his/ her mobile. Milk recording data shall be uploaded on the spot in Bharat Pashudhan.

Figure A.4: Smart Weighing Scale



(xi) On each day of milk recording, a milk sample shall be taken in a sample bottle (during morning recording), properly labelled, recorded and sent to a laboratory for milk component analysis for fat, SNF, protein etc.

(xii) Every animal shall be recorded both for milk volume and milk components on a monthly basis continuously for 11 times or until the animal becomes dry or is permanently lost from the system whichever is earlier.

(xiii) If the animal becomes dry before 11 recordings, the dry date shall be recorded invariably.

(xiv) If weaning is not practiced by the farmer or if the farmer could not be motivated to practice weaning, at least on the day of milk recording, the calf shall not be allowed to suckle its mother and the particulars shall be recorded in Bharat Pashudhan application. Milk collected from all four quarters shall be measured and the farmer shall be advised to feed the calf separately.

(xv) Except during late lactations, milk yield shall not be recorded on the day when it has dropped by 50% of the previous recording (respective morning or evening recording) or when the animal is suffering from some form of illness. In such cases, the reason for drop shall be recorded and the milk recording shall be reattempted after a period of at least five days.

(xvi) If the animal is milked only one time, then only that shall be recorded and the other timing shall be left blank or recorded zero.

(xvii) The milk recorder shall also record the details of the milk recordings in a milk recording card that is kept with the animal owner.

(xviii) Standard Lactation Yield of the milk recorded animal shall be calculated using the Test Interval Method described by International Committee for Animal Recording (ICAR).

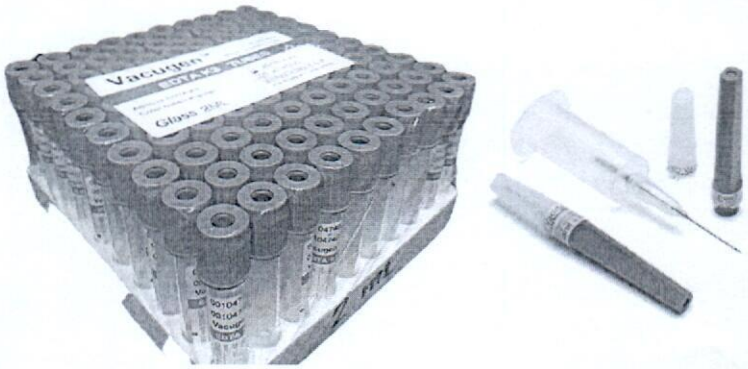
9. Blood sample collection and dispatch

9.1 Blood sample for genomic reference population should be collected from all the animals that has completed 6 milk records

9.2 Blood shall be collected either from jugular vein or coccygeal vein after proper restrain of animal.

9.3 It shall be ensured that puncture site is cleaned using antiseptic, especially if blood is collected from coccygeal vein. Hairs may be clipped if pose chances of contamination.

9.4 Blood shall be collected using violet cap EDTA vacutainers (4-5 ml is minimum required quantity) having capacity of 6 ml draw volume or more, vacutainer needles 20 G, 1 to 1.5 inch and needle holder.



9.5 Once blood is drawn, it shall be ensured that tube is removed from vein without removing needle to avoid entry of contaminated air in vacutainer. Once tube is removed, the needle should be removed from the vein and animal should be unrestrained.

9.6 Tube shall gently be inverted twice or thrice so that EDTA mixes well with blood.

9.7 Vacutainers shall immediately be labelled with permanent marker pen mentioning complete ear tag number of the animal.

9.8 Vacutainers shall be kept in the base provided with vacutainer in the chiller/Thermocol box filled with cooled gel packs (pre-freezed at -18° C at least 12 hours before start of actual blood collection in a deep freezer or freezer of a refrigerator).

9.9 Care shall be taken not to expose vacutainers directly to the sunlight or heat as this may cause hemolysis.

9.10 Transportation of blood from village to project office shall be done in chillers/ Thermocol box with gel packs (4-6 packs per box depending on size).

9.11 Once blood is received at project office, it shall immediately be transferred to refrigerator (4° C) and maintained till dispatch for at least 12 hours.

9.12 Samples shall be dispatched vertically in the thermocol box along with the frozen gel packs on all sides of the blood sample to ensure that blood sample is delivered in chill condition (2° to 6° C), to minimize hemolysis.

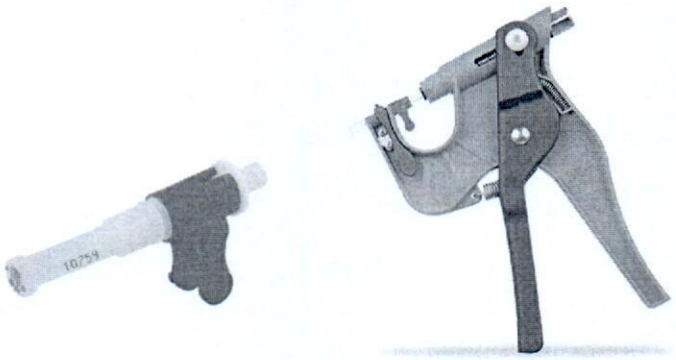
9.13 Thermocol box shall be tightly packed with adhesive tape so that it is does not open during transportation.

9.14 Along with blood sample, details of animals in prescribed format should be send both in hard copy and excel soft copy to the laboratory.

10. Tissue sample collection, labelling, storage and dispatch

10.1 In case it is very difficult to restrain the animal, tissue sampling units may be used to collect ear tissue sample from the animal that has completed 6 milk records.

10.2 A separate sampling unit and its sample collection pin should be used for each animal.



10.3 The sample should be collected from the tip of the ear or the area of ear where there are no visible veins.

10.4 The head of the animal should be restrained properly before start of sample collection

10.5 Sample collection site should be cleaned from all the grease and dirt and should be sterilized with sprit.

10.6 Tissue sampling unit should be prepared as per instruction of the manufacturer and tissue sample should be collected with single swift movement. The sampling applicator should be released quickly after sample collection to avoid injury to animal.

10.7 Ensure that the tissue sample is inside the tube. This is indicated by the presence of red stopper in the sampling tube.

10.8 Animal should be unrestrained as soon as sample collection is completed.

10.9 The sample sticker from the tissue sampling unit should be taken out and should be pasted against the animal id on the sample sheet. Sampling unit is self-labelled hence there is no need to put identity on the unit.

10.10 The sampling unit should be properly packed in the plastic zip pouch provided along with the unit with one sticker on the pouch.

10.11 All the samples collected on same day should be packed together in a larger plastic zip pouch and a copy of sample sheet showing animal identity and sample code sticker against each id, should be placed inside the pouch.

10.12 The pouch can be stored at room temperature or at 4 degrees in refrigerator.

10.13 Samples should be dispatched to the laboratory at room temperature within 15 days of collection.

10.14 A scanned copy of sample sheet with animal ID and sample sticker with sample code against each id should be sent to the laboratory.

11. Procedures for supervision

11.1 Surprise checking: a surprise check by visiting the site of milking, at the time of the scheduled milk recording and check the procedure of recording, the records and the functionality of the equipment used.

11.2 Validation check: Alternatively, the supervisor, on the day of visit to a particular village, shall visit a randomly selected animal, which is currently under recording, at the time of milking and measure the quantity of milk produced and record the data. This shall be used to compare the preceding milk recording data of the same animal.

11.3 Checking difference between GPS coordinates of milk recordings of same animal and physically verifying differences if any.

11.4 In addition to supervisors, activities shall also be supervised and monitored by other officers through regular and surprise field visits for checking of milk recording and post milk recording validations, review meetings etc.

12. Collection of reproduction details, disease incidence and feeding information

12.1 As far as possible, the Participating Agency will arrange to record all inseminations, Pregnancy Diagnosis and calving information on animals under milk recording.

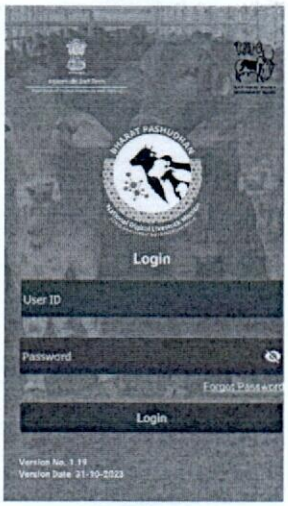
12.2 PA will also arrange to record all treatment done to the animal under milk recording by a veterinarian in the area.

12.3 The milk recorder will fill up a details of disease occurrences to the animal under milk recording at each milk recording day by asking relevant questions to the farmer.

12.4 The supervisor will conduct a quarterly survey for each animal under milk recording and collect information about feeding practices and cost of various feed ingredients.

13 Information System

13.1 All data related to National Milk Recording Programme shall be captured through Bharat Pashudhan



Costing of NMRP:

Particular	Parameter
	Rs 100 per record/ 20 records per animal Rs 2000 per animal
Recording kit	1 kit per/ Milk recorder
	Rs 1000 per kit (includes spring balance and 2 bucket, bag, register, Gum boots, Apron)
Ear tags	1000 laser printed ear tags Rs10/- per tag (from LHDCP)
Applicators	1 applicator per / Milk Recorder
	Rs700/-/ applicator
Incentive to farmers	Rs 2000/- er animal
Misc	10% of the total cost.
Total	5000/ animal
For 50,000 animals	25.00 crore