Guidelines for implementation of National Milk Recording Programme

The 14th National Steering Committee (NSC) meeting under Rashtriya Gokul Mission (RGM) held on 19 September 2023 has approved the National Milk Recording Programme (NMRP) to be implemented during 2023-24 to 2025-26. The major objectives of NMRP are:

- To locate superior germplasm in breeding tracts / milk pockets
- To introduce systematic milk recording and promote breeding with HGM bulls
- To calculate genetic gain among bovines
- To collect and publish production and breeding records of registered animals
- To create awareness among farmers and improve their income

NDDBhas been assigned the role of Implementing Agency (IA) for this project. NDDB will implement the project with the help of Participating Agencies (PA), like Milk Unions, State AHDs, State LDBs, Vet. Colleges, ICAR institutions, Trusts, NGOs 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 NDDB based on Cattle and Buffalo breeds available in the area, milch animal population and existing network of an agency. NDDB will train the field personnel, release funds and monitor the project activities in the field.

NMRP would be implemented across the country in modular form. 45 milk recording units (other than those of PT/PS projects) would be identified wherein milk recording could be conducted by identified PAs.
Each of such milk recording unit (similar to a PS project) would record milk yield following the Standard Operating Procedures (SOP) attached as Annexure I. The PA will also arrange collection of blood samples from recorded females for future genomic selection activities.

Following are the major activities to be carried out for the initiation of the project:

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.
2. Suitable PA would be selected from the agencies working in the identified areas.

   3. Meeting with the PAs would be held to explain detail about the project, SOPs, fund flow mechanism monitoring mechanism, sample logistics, location for milk analysers, manpower recruitment etc.
3. If agreed, PA would prepare an action plan with clear physical targets and financial provisions and submit the same NDDB.
4. The action plan to be placed before PMC for RGM for approval. All the data would be captured through INAPH/BharatPashudhan Application.
5. PAs have to open a separate bank account for NMRP and funds would be released for implementation as per RGM norms.

Annexure I

Standard Operating Procedures (SOP)

for implementing

National Milk Recording Programme

for

Cattle and Buffalo

January 2024

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

Foreword

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.

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.

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.

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.

Objectives of the Programme

The main objectives of the National Milk Recording Programme are:

- To locate superior germplasm in breeding tracts/milk pockets.
- To introduce systematic milk recording and promote breeding with High Genetic Merit bulls.
- To calculate genetic gain among bovines.
- To collect and publish production and breeding records of registered animals.
- To create awareness among farmers and improve their income.

NMRP would be implemented across the country in modular form. Initially, 45 milk recording units (other than those of PT/PS projects) would be identified wherein milk recording could be conducted by identified Participating Agencies (PA) which may include Milk Unions, State Animal Husbandry Departments, State Livestock Development Boards, Veterinary Colleges, ICAR institutions, Trusts, Non-Governmental Organizations etc..

Each such milk recording unit (similar to a PS project) would milk record animals in identified 45 milk recording centres following Standard Operating Procedures (SOP) that follow.

Standard Operating Procedures (SOP)

Operational area

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.

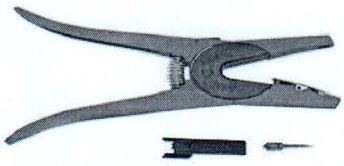
Animal Identification

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



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.

Information System

All data related to NMRP shall be captured through Bharat Pashudhan application or any other software as indicated by National Dairy Development Board.

Milk Recording

The key points to be considered for milk recording include:

a. Animal in any lactation may be considered for inducting under milk recording.

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

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

d. The milk recording work shall be assigned to exclusive milk recorders who have no other assignments during milk recording timings.

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

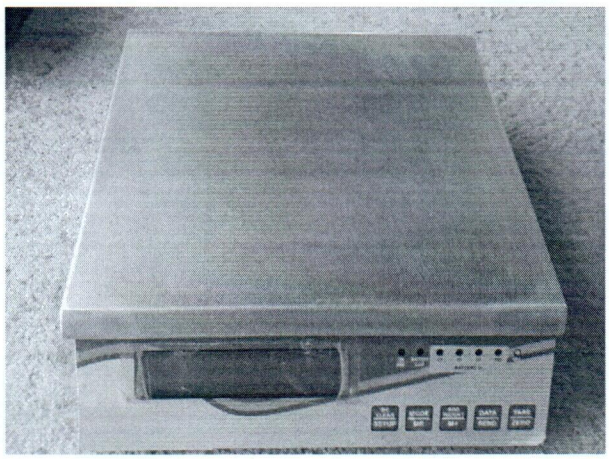
g. First recording shall be carried out on or after 5 days of calving and not later than 25 days of calving.

h. 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.

i. 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.

j. 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 BharatPashudhan application.

Figure A.4: Smart Weighing Scale



k. 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.

l. 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.

m. If the animal becomes dry before 11 recordings, the dry date shall be recorded invariably.

n. 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 BharatPashudhan application. Milk collected from all four quarters shall be measured and the farmer shall be advised to feed the calf separately.

o. 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.

p. 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.

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

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

Blood sample collection and dispatch

Procedures for supervision

For checking the milk recordings, the supervisor shall conduct the following:

- o 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.

- o 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.

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

d. 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.

Collection of reproduction details, disease incidence and feeding

information

i. As far as possible, the PA shall arrange to record all inseminations, pregnancy diagnosis results and calving information on animals under milk recording.

ii. PA shall also arrange to record all treatments done to the animal under milk recording by a veterinarian in the area.

iii. On each milk recording day, the Milk recorder should ask relevant questions to the farmer to capture incidences of diseases (if any) to the particular animal under milk recording.

iv. 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 and any other items as directed by Implementing Agency.