

International Livestock Research Institute

Training course report

Mentoring government pig breeding farms

June 2020




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| | |
|----------------------------|---|
| Name of training workshop: | Mentoring government pig breeding farms |
| Organized by: | Operational Project Implementation Unit, Assam Agribusiness and Rural Transformation (APART) project, Animal Health and Veterinary Department |
| Name of scheme: | Assam Agribusiness and Rural Transformation (APART) project, funded by the World Bank |
| Delivered by: | International livestock Research Institute (ILRI) |
| Location: | Regional Institute of Livestock Entrepreneurship and Management, Rani |
| Date: | 22-25 June 2020 |

পৰিচালনা সমিতিৰ উপ-সভাপতি ভবেন্দ্ৰ নাথ মোধ উপস্থিত থাকে।

বাণীত চাৰিদিনীয়া চৰকাৰী কৰ্মশালাৰ শুভাৰম্ভণি

মহানগৰ খবৰ, ২২ জুন : বিশ্বব্যাপী কৰ'না ভাইৰাছৰ ভয়াৱহ সংক্ৰমণ অব্যাহত থকাৰ লগতে সমান্তৰালভাৱে জনসাধাৰণৰ উন্নয়ন যাতে স্থবিধ নহয়, তাৰ প্ৰতি লক্ষ্য ৰাখি ইতিমধ্যে ৰাজ্যচৰকাৰে কেতবোৰ নীতি-নিয়মৰ মাজেৰে উন্নয়নমূলক কাম-কাজ অব্যাহত ৰাখিছে। গুৱাহাটী মহানগৰীৰ পাৰ্শ্বৱৰ্তী বাণীস্থিত আঞ্চলিক পশুধন উদ্যমিতা আৰু ব্যৱস্থাপনা প্ৰতিষ্ঠানৰ প্ৰেক্ষাগৃহত আজি এক চাৰিদিনীয়া প্ৰশিক্ষণ কাৰ্যসূচী তথা কৰ্মশালাৰ শুভাৰম্ভণি হয়। আন্তঃৰাষ্ট্ৰীয় সংস্থা বিশ্ব বেংকৰ আৰ্থিক সাহায্যৰে আৰু ইণ্টাৰনেচনেল লাইভষ্টক ৰিচাৰ্ছ ইনষ্টিটিউট (আইএলআৰআই)ৰ কাৰিকৰী সহযোগত এই কৰ্মশালাখনৰ আয়োজন কৰা হয়। ৰাজ্যৰ গোৱালপাৰা, থানাপাৰা, বাণী, সোণাপুৰ, মৰিগাঁৱৰ পশুপালন বিভাগৰ গাহৰি পামৰ ১৫জন প্ৰবন্ধকে অংশগ্ৰহণ কৰা এই কাৰ্যসূচীৰ শুভাৰম্ভণী কৰে বাণীস্থিত আঞ্চলিক পশুধন উদ্যমিতা আৰু ব্যৱস্থাপনা প্ৰতিষ্ঠানখনৰ সঞ্চালক নিত্যাৰায়ণ মহন্তই। শুভাৰম্ভণি অনুষ্ঠানত উপস্থিত থাকে আইএলআৰএলৰ বিজ্ঞানী ড° ৰামপ্ৰতীম ডেকা, বিজ্ঞানী ড° মদন তামূলী। উল্লেখ্য যে এই গোটেই কাৰ্যসূচীৰ সফল ৰূপ দিয়াৰ ক্ষেত্ৰত আগভাগ লয় প্ৰতিষ্ঠানখনৰ উদ্যমী উৎপল ভৰদ্বাজে।

Introduction

To improve the pig sub-sector in the State of Assam, India, government pig breeding farms need to supply quality germplasm to large commercial and smallholder pig farmers. Therefore, the government pig breeding farms need to keep good quality breeding stock, follow scientific breeding methods, keep necessary records, follow good feeding, healthcare and management practices and create and maintain infrastructure that meet the needs of efficient farm operations.

In addition, methods of pig breeding, feeding, biosecurity and housing have changed and therefore it is important for farm managers to get acquainted with the improved knowledge and practices.

This is especially so for farm managers who are regularly transferred from one position to another or from non-farm to farm operations. Improved knowledge will help farm managers to better manage exotic germplasm and increase productive and reproductive performance of pigs.

Capacity building of farm managers of government pig breeding farms is envisaged under the Assam Agribusiness and Rural Transformation (APART) project, funded by the World Bank.

As a part of this initiative, on 22–25 June 2020, the International Livestock Research Institute (ILRI) held a training workshop for farm managers of government pig breeding farms and some officers associated with the APART project. The workshop was organized by the Animal Health and Veterinary Department at the Regional Institute of Livestock Entrepreneurship Management, Rani, Kamrup, Assam.

Objectives of the training workshop

- To increase knowledge and capacity of the farm managers on scientific breeding programs being used worldwide and under the pig breeding policy in the State of Assam.
- To increase knowledge and capacity on selection of animals for breeding, culling, heat detection, natural mating and artificial insemination in pigs.
- To generate knowledge and capacity on scientific management of boars, sows, neonates, piglets and growers.
- To generate knowledge and capacity on feed formulation and developing feeding regimes for pigs of different categories.
- To generate knowledge on modern housing and biosecurity, disease management, manpower management, day-to-day record keeping and farm planning and operations.

Training tools and methods

- Presentations
- Participatory and group discussions
- Customised videos of commercial pig breeding farm operations

Training participants

The following 14 participants (4 female; 10 male) attended the training workshop and were issued with certificates at the end of the workshop.

1. Dr Anuj Buragohain
2. Dr Utpal Nath
3. Dr Utpal Das
4. Dr Prasanta Kr. Rabha
5. Dr Syed Ajijul Islam
6. Dr Nilambor Thakuria
7. Dr Hemanta Kr. Kalita
8. Dr Jahanara Begum
9. Dr Prasanna Saikiya
10. Dr Moromi Sharma
11. Dr Mallika Nath
12. Dr Namita Saud
13. Dr Papiya Das
14. Dr Ratul Kalita

Topics delivered

- Breeds and breeding program
- Pig breeding policy of Assam
- Selection and mating/culling of animals
- Management of neonates, piglet, gilts, sows and boars
- Feeds and feeding of different categories of pigs
- Management of the most common pig diseases
- Modern housing and biosecurity management
- Day-to-day farm operations, record keeping and planning

Session flow

| Day | Time | Session | Topics covered |
|-----|-------------|---|--|
| 1 | 10.00-10.30 | Registration | |
| | 10.30-11.15 | Session 1 Introduction | Inauguration of the program Self-introduction Objectives of the program and the training Collection of expectations of the participants Ground rules of the training Logistics arrangement Pre-training evaluation |
| | 11.15-11.30 | | Tea break |
| | 11.30-1.00 | Session 2 Breeds and breeding program | Breeds of pigs Breeding strategies in practice worldwide Breeding strategy in India with specific focus on Assam Different types of breeding farms Pig breeding policy of the state |
| | 1.00-2.00 | | Lunch break |
| | 2.00-3.15 | Session 3 Selection of animals and mating system | Physical selection of animals for breeding Important methods of breeding with advantages and disadvantages Different methods of mating with advantages and disadvantages |
| | 3.15-3.30 | | Tea break |
| | 3.30-4.45 | Session 4 Artificial insemination in sows | Reproductive system of sows and boars Synchronization of sows Method of storage and transportation of semen Method of artificial insemination of sows Factors affecting artificial insemination |
| | 4.45-5.00 | | Recapitulation of the 1 st day's learning |
| 2 | 10.00-10.10 | | Reflection on the 1 st day's learning |
| | 10.10-11.30 | Session 5 Management of gilts, sows and boars | Detection of heat Heat symptoms Mating Pregnancy detection Feeding of breeders Management of breeders |
| | 11.30-11.45 | | Tea break |
| | 11.45-1.00 | Session 6 Management of farrowed sows and care of suckling piglets | Management of farrowing Care of neo-natal piglets Management of suckling piglets Feeding regime of sows and newborn piglets Various piglet activities: brooding, clipping of needle teeth, tail docking, castration, iron injection etc. Weaning of piglets Selection, segregation and selling of piglets Management of health and diseases |
| | 1.00-2.00 | | Lunch break |
| | 2.00-3.15 | Session 7 Care and management of weaned piglets and growers | Feeding regime Deworming and vaccination Other management practices |
| | 3.15-3.30 | | Tea break |

| | | | |
|---|-------------|--|---|
| | 3.30-4.45 | Session 8 Data recording | Importance of data recording Identification of reports essential for effective running of a breeding farm Formats for data recording Data entry and data analysis Developing a reporting system Traceability |
| | 4.45-5.00 | | Recapitulation of the 2 nd day's learning |
| 3 | 10.00-10.10 | | Reflection of the 2 nd day's learning |
| | 10.10-11.30 | Session 9 Various diseases of pigs | Most prevalent diseases on government farms Causative agents Transmission Symptoms Diagnosis |
| | 11.30-11.45 | | Tea break |
| | 11.45-1.00 | Session 10 Diagnosis and treatment of disease | Treatment Prevention Control Pig-associated zoonoses Antimicrobial residues |
| | 1.00-2.00 | | Lunch break |
| | 2.00-3.15 | Session 11 Housing | Different pig shed designs Ventilation systems Brooding facilities Drinking water systems Feeding systems Designing a new pig farm |
| | 3.15-3.30 | | Tea break |
| | 3.30- 4.45 | Session 12 Biosecurity | Biosecurity measures Quarantine Hygiene and sanitation Different sanitizing agents Disposal of dead pigs/aborted materials |
| | 4.45-5.00 | | Recapitulation of the 3 rd day's learning |
| 4 | 10.00-10.10 | | Reflection of the 3 rd day's learning |
| | 10.10-11.30 | Session 13 Feed formulation and quality control | Feed ingredients and their nutritive values Feed formulation Feed quality management Cultivation and use of food-feed crop |
| | 11.30-11.45 | | Tea break |
| | 11.45-1.00 | Session 14 General farm operation | General farm operation practices Culling of breeders Replacement of breeders Networking Stock maintenance Water and electricity |
| | 1.00-2.00 | | Lunch break |
| | 2.00-3.15 | Session 15 Farm development planning | Farm development planning of own farm based on the lessons learnt in the training |
| | 3.15-4.00 | Session 16 Valedictory session | Post-training evaluation Valedictory session |

Post-training evaluation

At the end of the workshop, participants were asked to evaluate the training in terms of knowledge gained and overall quality of the training delivery using a prescribed format in which there was a scope to evaluate the learnings by answering 'yes' or 'no' before and after the training and to score the gained knowledge out of 5. To avoid bias, participants were asked not to mention their names. The outcome of the evaluation was entered into a Microsoft Excel spreadsheet and evaluated. The results are stated below.

The training evaluation suggests that the workshop was highly successful. Participants mentioned the training as highly beneficial by rating an average score of 9.73 on a 10-point scale. The clarity of the subjects was rated as 9.45 and the delivery quality of the resource persons rated 9.91 out of 10. Participants also acknowledged the logistics arrangements of the training by scoring an average point of 9.18.

Participants' highest gain in knowledge was reported on 'the knowledge of the pig breeding program followed by big breeding companies' with mean score difference of 2.55 between pre- and post-training knowledge. This was followed by the difference in score of 2.34 for parameters such as 'knowledge about what is nucleus farm and what is multiplier farm' and 'knowledge on how to prepare a development plan for my farm'.

Participants reported to have pre-existing knowledge of parameters such as 'I know the care and management of newborn piglets' as the training brought least impact on them (mean score difference of only 1.11). This was followed by parameters such as 'I know the diseases of pigs (including African swine fever) and how to prevent and control the same' (mean score difference of 1.33).

Overall, participants gained knowledge by participating in the training program on mentoring pig breeding farm. Across the parameters, the mean score difference was 1.79 (see Table 1).

Table 1: Training outcome evaluation at the end of the training

| Parameters | Average score of pre-training status (out of 5) | Average score of post-training status (out of 5) | Difference |
|---|---|--|-----------------|
| I know the pig breeding program that is followed by big breeding companies | 1.78 | 4.33 | 2.55 |
| I know the pig breeding policy of the state | 2.67 | 4.55 | 1.88 |
| I know what is meant by nucleus farm and multiplier farm | 2.55 | 4.89 | 2.34 |
| I know the selection criterion of breeding sows, boars and piglets | 2.89 | 5.00 | 2.11 |
| I know how to inseminate pigs | 3.11 | 4.67 | 1.56 |
| I know how to synchronize pigs | 2.67 | 4.67 | 2.00 |
| I know what precautions are to be taken in mating/artificial insemination of pigs to get higher litter size | 2.78 | 4.67 | 1.89 |
| I know what is flushing and its advantages | 2.67 | 4.44 | 1.77 |
| I know the feeding regime of pregnant and lactating sows when to increase/decrease feed | 3.11 | 4.78 | 1.67 |
| I know what precautions to take during farrowing to prevent piglet mortality | 3.55 | 4.89 | 1.34 |
| I know the care and management of newborn piglets | 3.78 | 4.89 | 1.11 |
| I know the effect of improper weaning of piglets | 3.22 | 4.89 | 1.67 |
| I know what data are to be recorded, how to record and how to use data | 3.33 | 4.67 | 1.34 |
| I know the diseases of pigs (including African swine fever) and how to prevent and control the same | 3.67 | 5.00 | 1.33 |
| I know the different modern system of housing of pigs with advantages and disadvantages | 3.33 | 5.00 | 1.67 |
| I know the biosecurity infrastructure requirement and biosecurity measures required in a farm | 3.11 | 5.00 | 1.89 |
| I know the use of disinfectants and cleaning agents in farm operations | 3.56 | 5.00 | 1.44 |
| I know how to compute a concentrate feed and what is the requirement of different feed ingredients | 2.89 | 4.78 | 1.89 |
| I know how to prepare a development plan for my farm | 2.33 | 4.67 | 2.34 |
| Average | 3.0 | 4.8 | 1.79 |
| Overall evaluation | | | Score out of 10 |
| Overall usefulness of the training | | | 9.73 |
| Clarity of the subject | | | 9.45 |
| Quality of delivery of the training by the resource person | | | 9.91 |
| Logistics arrangements | | | 9.18 |

Outcome of the discussion with the farm managers about their immediate requirements for improving farm management

In the last session of the training, a discussion was held with the farm managers about the immediate actions needed to improve the management of the farms. The agreed points are stated below:

- All pig breeding farms should follow same standard register for entering data. Farm managers and ILRI should develop a standard format for maintaining hard copies of registers. Printed registers may be supplied from the headquarters.
- Each farm should keep different breeds in different sheds. If the farm is supplied with one or two exotic breeds, it should follow pure-breeding and keep adequate breeding records.
- If the farm is supplied with one exotic breed and one local breed (e.g. Ghungroo/Doom), it can opt for cross-breeding.
- Each farm should be known for its breeds; no haphazard breed introduction or cross-breeding program should be followed in the farm.
- Ear tagging of each animal is critical for a successful breeding program.
- Personal protective clothing (apron, gum boots, mask, gloves) for the farm workers and managers.
- A separate set of chappal for healthy pig sheds and quarantine sheds.
- Adequate disinfectants in each farm.
- Repairing of floors and drains in each farm.
- Feed trolley, weighing balance and pregnancy detector in each farm.
- Construction of two manure pits at the end of each drainage system to be used alternately.
- Pit in each farm for burning biomedical waste (e.g. needles, syringes, vaccine vials etc.)
- Dead pig disposal site in each farm.
- Ceiling in each shed.
- Electric fan in each shed.
- Frequency of feed supply should be monthly. Feed quality should be ensured.
- Boundary wall of the Kuchdowa farm and Rani farm is required for proper biosecurity (separation from the rest of the premises).
- Gate at entrance with wheel dip and security person in Rani, Kuchdowa and Khanapara farms.
- Wire netting above the half wall in the pig sheds of Rani, Sonapur and Kuchdowa farms.
- Fixing the water supply problem in Rani farm.
- Contractual labour is urgently required in each farm.
- Those farmers who could not attend the training will be trained through video-conferencing.

Some images of training sessions delivered by ILRI

