

Training Manual for Pork Retailers



Prepared under the
Assam Agribusiness & Rural Transformation Project (APART)
ARIAS Society, Khanapara, Guwahati

For
Animal Husbandry & Veterinary Department, Govt. of Assam

By
International Livestock Research Institute (ILRI)

Training Manual for Pork Retailers

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INTERNATIONAL
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Foreword

Pork consumption has been growing in the state of Assam and the growing pork business has generated employment for many people mostly belonging to different tribal communities of the state. However, this pork business is being run following traditional practice without taking care of adequate clean and hygiene measures right from slaughtering to pork retailing that the consumers expect and deserve. This improved clean and hygiene in pork retailing is required not only at the interest of consumers but this is critical for sustaining their own business under the emergence of new food borne and zoonotic diseases and challenges coming from big industrial houses.

The prevailing practices is largely due to lack of knowledge of the pork retailers on “what ought to be the practice?” In the absence of any customised training on clean and hygienic measures to be adopted by the pork retailers, the present system of pork business is likely to continue for years together in the future. Again, although AHVD is putting sincere efforts for augmenting production at farmers’ level under various schemes, interventions for development of pork business in a demand driven production system under the APART project is the first of its kind which will not only raise pig production but will also contribute in improving pork quality, safety and demand. The idea of quality pork production through training, monitoring and certification scheme introduced by International Livestock Research Institute (ILRI) in the APART project has been an innovative approach and will surely bring paradigm shift in pork business of the state.

This training manual has covered all important areas of pork business to be carried out by the pork retailers which will improve quality standards of pork and facilitate in managing compliance with food safety regulations of FSSAI and local municipal bodies. With various topics explained in short and simple language and depicting the figures and illustrations of the Assam’s traditional pork handling practices by the pork retailers of the state, it will definitely have a richer penetration to the understanding of pork retailers of the state and motivate them for bringing a change in the perspective of food safety concerns and exploiting market opportunities of hygienic pork.

I take on record the sincere efforts put by ILRI in formulating this manual with support from concerned officials of AHVD and ARIAS society. I congratulate ILRI and other stakeholders of APART for successfully formulating this manual into a printable version and wish good success of the whole training programme.

(Rajesh Prasad)

LAYA MADDURI, IAS
STATE PROJECT DIRECTOR
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Preface

In recent times, pork retailing has evolved as business employment generation opportunity for many people, in the state of Assam. Despite the high demand for pork in the state, the methods and process of pork retailing are still practised in a traditional and unhygienic manner. Therefore, the need of the hour is to upscale the entire process, using scientific and hygienic methods, so that the consumers do not have the risk of contact any kind of foodborne or zoonotic diseases.

With a huge task of building the capacity of the pork retailers, International Livestock Research Institute (ILRI) conducted the initial Training Need Assessment (TNA) among the pork retailers and based on the assessed knowledge gap, has developed a customized training manual for the pork retailers annexed by a monitoring and certification scheme, which is an innovative approach and was done through rigorous interactions with the concerned officers of AHVD, value chain actors and the members of the pork retailing community.

The “**Training Manual for Pork Retailers**”, developed by the Animal Husbandry and Veterinary Department (AHVD), Govt. of Assam with the technical support from ILRI under the World Bank-funded Assam Agribusiness and Rural Transformation Project (APART) will not only raise pig production but also improve the business of quality pork production in the State.

(Laya Madduri)

Acknowledgment

We are immensely grateful for the guidance and support that we have received from the Agriculture Production Commissioner (APC) to the Govt. of Assam; Commissioner and the Secretary to the Govt. of Assam, Animal Husbandry and Veterinary Development (AHVD); State Project Director, ARIAS Society; Director, Nodal Officer (APART) and other officials of AHVD and concerned officials of the ARIAS Society without which preparation of this training manual would not have been a reality.

We also express our deep sense of gratitude to the Veterinary Officers (VOs), Food Safety Officers and other concerned officials who gave important feedback during content development and content finalization of this training manual.

Our sincere thanks also goes to the pork retailers who significantly contributed by supplying the necessary information during Training Need Assessment (TNA) and providing observation on the content of the draft manual in separate FGDs and direct contact at individual farmers' level in few pig clusters of the project. We are also thankful to the pork retailers for their support by allowing us to collect images of specific slaughter and pork retailing activities needed to incorporate in the manual.

At last but not the least we express our sincere thanks to all the ILRI's colleagues who drafted the earlier version of this training manual based on which we have developed this revised and most comprehensive version to meet the current need of the farming communities.

Team Leader & Resident Consultant, APART-ILRI
International Livestock Research Institute (ILRI)

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Abbreviation

AHVD	:	Animal Husbandry & Veterinary Department
APART	:	Assam Agribusiness and Rural Transformation Project
APC	:	Agriculture Production Commissioner
ARIASS	:	Assam Rural Infrastructure and Agricultural Services Society
BIS	:	Bureau of Indian Standard
CLR	:	Corrected Lactometer Reading
CSF	:	Classical Swine Fever
ASF	:	African Swine Fever
FGD	:	Focus Group Discussion
FSSA	:	Food Safety and Standards Act
FSSAI	:	Food Security and Standard Authority of India
ILRI	:	International Livestock Research Institute
LPG	:	Liquefied Petroleum Gas
PFA	:	Prevention of Food Adulteration Act
SNF	:	Solid Not Fat
TNA	:	Training Need Assessment
VO	:	Veterinary Officer

Proposed training schedule

	Particulars	Time
Day 1	Registration	10:30 – 11:00 am
	Session 1 Introduction to the training	11:01 – 11:45 am
	Pre-training Status evaluation	11:46 am– 12:00 pm
	Session 2 Infrastructure and utensils requirement for a pork retail unit	12.01 -2:00 pm
Day 2	Participants’ reflection of day 1	
	Session 3 Germs that cause pork spoilage and disease among consumers	11:00 am – 12.30 pm
	Session 4 Methods of transportation of live pigs and pork for selling purpose	12:31 – 2:00 pm
Day 3	Participants’ reflection of day 2	
	Session 5 Clean and hygienic practices required at pork retailing outlets-I	11:00 am – 12:30 pm
	Session 5 Clean and hygienic practices required at pork retailing outlets-II	12:31- 2:00 pm
Day 4	Participants’ reflection of day 3	
	Session 6 Standard process of slaughtering pigs	11:00 am - 12:30 pm
	Session 7 Preservation, packaging and value addition of pork	12:31 - 2:00 pm
Day 5	Participants’ reflection of day 4	
	Session 8 Rules and regulation governing slaughter and selling practices	11:00 -11: 45 am
	Session 9 Record keeping, networking and business development	11:46 am – 1:15 pm
	Post training Status evaluation	1:16 pm – 1:45 pm

Note: The suggested training schedule is only indicative, facilitator may modify the training schedule as deemed fit to the local circumstances. High tea may be provided at the end of the 2nd session on each day

Duration of training: 5 days

Total time: 15 hours

SESSION 1: Introduction to the Training

Introduction to the training

The training facilitator will introduce the training by following the sequence as stated below-

Welcome address: Facilitator will welcome the participants and explain the objectives of the training.

Self-introduction: Facilitator will ask the participants to state their names, primary occupations, years of experience on pork retailing business.

Expectation from the training: Facilitator will ask the participants to explain their expectations from the training. Facilitator will write down the key points in a flipchart/whiteboard/black board in order to revisit the same at the end of the training.

Pre-training status evaluation: Facilitator will distribute the pre-training evaluation form among the participants. Facilitator will ask them to put tick marks in the appropriate boxes (Agree/Disagree/Don't know). After the evaluation, s/he will collect the forms and use the same at the end of the training to compare the differences before and after the training.

Ground rules: Facilitator will ask the participants what general behavior (e.g. keeping mobile phone switched off or in silent mode during training, coming to the training on time, leaving the training after completion, no gossiping during the time of training delivery, etc.) they expect to experience in order to run the training smoothly and effectively. He/She will list all suggestions in a flip chart and post the flipcharts where it is visible throughout the training.

Content: Importance of the pork retailers, changing consumers' behavior, relevance of the training, benefits of the training, what participants would learn from the training etc.

Session Objectives

The session is designed to make you gain knowledge on the following

- The role of the pork retailers in the society.
- How changing consumers' preference, behaviour, evolving business practices and new regulatory environments may shape the business in future.
- How this training programme will benefit them to overcome the emerging challenges.

1.1 Why is a pork retailer important?

A pork retailer-

- Converts live pigs to pork;
- Helps consumers by supplying pork to meet their consumption needs;
- Give feedbacks to pig producers /traders about the quality of pigs in term of pork quality (based on post-mortem inspection).

1.2 Importance of hygienic pork handling and selling

- Pork sold in temporary stall/road side/weekly market without having proper infrastructure increases dust, pollutant and microbial load and pose risk to human health;
- No-one wants to eat pork that has been handled in an unhygienic way. The training will help pork retailers understand the good hygienic practices that are to be followed while retailing pork to meet consumers' satisfaction;
- Meat is an effective medium for growth of germs which may cause diseases to human

and animals. Germs get multiplied quickly in dirt, especially where blood and fatty substance are available;

- Poor hygiene in slaughtering and selling may increase the germs/microbial load in meat;
- Pork retailers have an important role to play in prevention of certain food borne (e.g., Salmonellosis) and zoonotic diseases (e.g., cysticercosis, brucellosis) that may transmit from pigs to humans or vice-versa;
- Pork retailers have an important role to play in prevention of certain deadly pig diseases like African Swine Fever (ASF), Classical Swine Fever (CSF) that may transmit through pork, pork products and pig traders;
- Regulatory mechanism of municipalities and Food Safety & Standard Authority of India (FSSAI) are becoming more stringent to meet the food safety norms necessitating hygienic pork handling and selling;
- With increase in income, the consumers are ready to pay more for quality pork;
- Because of better clean and hygiene maintained in processed/frozen pork marketed by big industrial houses the demand for these products are also growing in major urban centers posing a challenge for the traditional pork retailers who operate under poor hygienic condition;
- Since pork retailing is running based on age-old practices, training for pork retailers become inevitable to face the emerging challenges, to meet the consumers' changing preferences and need and to comply with regulatory environment;
- Availing training on relevant business has become more important to get access to institutional services like credit, insurance, trade license, etc.

1.3 How does the training benefit you?

By participating in the training you will be benefited by gaining knowledge on-

- Germs that cause pork spoilage and on hygienic handling of pork at slaughter place and retail unit will help you in ensuring safety and quality and increased shelf life of your product resulting to rise in consumers' confidence on pork quality and rise demand;
- The considerations for buying suitable pigs/pork for retailing them will enable you to avoid problems in pork arising from buying of diseased pigs/pigs under treatment (e.g. avoidance of buying pigs suffering from cysticercosis);
- Personal health and hygiene and cleaning and disinfection of utensils and construction of hygienic slaughter place and retail unit will help you to have better presentation of your pork that would be more appealing to buyers, eventually leading to enhanced demand and income. Knowledge and practices on adoption of various methods and steps involved in humane method of pig slaughtering will help you in ensuring welfare of animals;
- Various food safety regulations, new business policies and local legislation and compliance with the same that will help you to run business smoothly without any disturbance;
- Good business and behavioural practices that may enable you to communicate with your target customers and other clients more effectively and convincingly.
- Business development practices that may help in increasing the volume of your business.

Additionally,

- Having the training certificates may ease your access to institutional credit, insurance and other services that will help you in scaling up your pork business.
- Having the training certificates may make you eligible to avail project benefits (e.g., badge, logo, uniform, etc.), if any.
- Having compliance with regulations, better quality product, brand value, etc. will help in increasing your social status and recognition.

1.4 What are the key sessions that are to be delivered in the training?

The training will deliver the following sessions during the entire course of the training

- Various infrastructural requirements in a pork retail unit along with requirements of utensils, equipments and facilities in both the small slaughter place and pork retail unit (could be learned from Session 2).
- Understanding about the disease causing agents such as germs, parasites etc., controlling anti-microbial and pesticide residues in pork, controlling human health risk through understanding zoonotic diseases in pigs and having knowledge on the activities in the event of outbreak of African Swine Fever (could be learned from Session 3)
- Selection of the slaughter animal and safe transportation of the same. (could be learned from Session 4)
- Various clean and hygiene practices to be adopted in the pork retailing unit (could be learned from Session 5)
- The standard slaughter practices which are humane and also hygienic (could be learned from Session 6)
- Understanding the suitable methods/process of pork preservation, packaging and value addition (could be learned from Session 7)
- Understanding about the prevailing laws and by-laws for carrying out uninterrupted pork business (could be learned from Session 8)
- Keeping proper records of pig/pork purchase and revenue receipts, expenditures incurred under various head and calculating net returns of the business, various requirements for improving your business development and management skill etc. (could be learned from Session 9)

Group discussion: Changes in pork production and handling:

Instruction for the resource person:

Divide the participants into two equal groups and ask each group to discuss among themselves the major challenges faced during last 5 years, what major challenges they may face in the days to come and how they will cope with those challenges. Ask one from each group to present the important points coming out of the discussion and put your comments on it before the participants.

SESSION 2: Infrastructure and Utensils Requirement for a Pork Retail Unit

Session objectives

The session is designed to help you in gaining knowledge on

- The housing design of a pork retail unit
- The requirements in a slaughter place (if pigs are slaughtered by the pork retailer himself)
- The requirements of equipments, utensils and other facilities required in a pork retail unit.

Training Methods to be followed

- Participatory discussion
- Exposure visit to an improved pork retail unit

Training materials

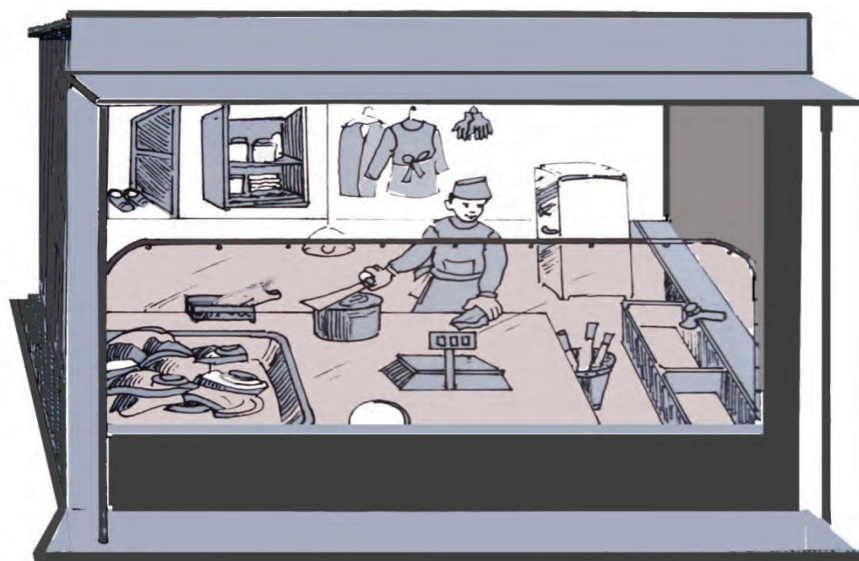
- Laptop, LCD projector and screen
- Flip chart
- Manual and handouts
- Selection of modern pork retail unit

2.1 Infrastructural and other requirements of a pork retail unit

The layout is designed based on recommendations of different agencies like Bureau of Indian Standard (BIS, 1973), (BIS 1989) and Meat and Food products order (MFPO, 1973).

2.1.1 Infrastructural requirement for a pork retail unit

- A retail outlet should be of size about 3m×3m×3.4m size
- Front wall should be concrete upto 1.25 m. Remaining part above the front wall should be covered with glass fittings
- A marble/ granite top platform inside the stall for displaying pork towards the glass covering
- Carcass hanging facility, if carcass is displayed horizontally
- Wash basin with running water facility
- A varanda in front side (optional)
- Electricity connection with appliances like- fan, light, fridge/deep freezer etc.
- A rack with glass covering for displaying processed meat products like canned pork, pork pickle etc (if sold/have plan to sell any such products).
- Good drainage and disposal facility
- Wardrobe for keeping dress, apron, mask etc.
- A towel hanger
- A shoe rack outside for keeping shoes/chappal
- A sign board



A schematic diagram of a pork retail outlet

Some other details about the required infrastructure

- In retail outlet, meat should be cut and displayed in a raised platform. The top of the platform should be made of marble/granite and there should be stainless steel tray to keep cut up pieces of meat.
- There should be adequate ventilation for free circulation of air. Ventilator should be covered with fly proof netting.
- Never display the meat on the water absorbent surface i.e., bamboo mat or wooden platform, as it is difficult to thoroughly clean these.



*Pork being displayed for sale in open place and on news papers
vis-a vis on stainless steel tray in a closed chamber*

Walls and floor

- The floor and wall should be of concrete with light coloured tiles or marbles for easy cleaning.



A pork retailing outlet with tiled flooring and walls

- The floor should be sufficiently sloped towards the drain for easy draining out of the dirt and meat particles.

2.1.2 Small slaughter place for those who slaughter and sell by themselves

Those pork retailers who slaughter and sell their own pigs regularly (but do not slaughter pigs for others) either at their home premises or near their business premises should have some basic slaughter infrastructure as follows:

- Slaughter place should have facilities like a shed with concrete floor having the provisions of running water, electricity and drainage system.
- Slaughter space should be sufficient to carry on multiple tasks such as killing, scalding, evisceration, cleaning of carcass and intestines, etc.
- Slaughter space should be confined with boundary walls to prevent entry of dogs, cats, chicken, rodents, etc. These may transmit the germs from carcass to other pigs and vice versa.



Pig is slaughtered on wayside over a plastic



Dogs are straying to consume offal

- There should be a concrete platform to scrub, clean and eviscerate the carcass. It should never be done on the ground or over a polythene sheet, banana leaves, etc. A polythene sheet cannot be thoroughly cleaned and banana leaves cannot fully prevent contact of pork with soil.
- All windows, ventilators etc. in slaughter place as well as in retail unit should be covered with wire netting.



Pork displayed on banana leaves vis-a-vis on a clean aluminium sheet



- There should preferably be a hanging facility (made of stainless steel). Dressing of carcass should be done by hanging the carcass.
- Leftover of pork shall not be sold out to farmers for feeding healthy pigs. If fed by farmers, they should properly boil it before feeding.
- No leftover shall be allowed to go to natural water bodies, stream, river etc. as it may contaminate water.
- Only underground water/ tap water should be used for cleaning. Under no circumstances dirty water from stream, river, pond, drain etc. should be used. Clean surface water should be used only after filtration. If dirty water is used,, please think, if you can drink such water or can prepare your food with such water.



Dirty water being used for washing carcass

- All slaughter places should have offal disposal facility. It may be buried or burnt. Should not be offered to dogs, cats etc. as it may transmit diseases.
- Slaughter place should always be cleaned thoroughly before and after use.
- Pigs should be killed by making them feel minimum pain. They should not be beaten/ frightened before killing.

2.1.3 Equipments, utensils and facilities required in a pork retail unit

A pork retail outlet should have some equipment, utensils and facilities to perform day to day work as stated below

- Refrigerator/ Deep freezer of vertical type for preservation of pork.
- Steel or aluminium tray for displaying cut up pieces of pork.
- Platform type digital weighing balance.
- Stunning gun/ electrical head tongs/ simple stunning equipment for direct blow/ heart puncturing javelin.
- Knives
- Knife sharpening stone
- Belt/container for holding knives
- Meat cutting block





Knife suitable for chopping pork



Meat cutting block (Plastic and wooden)



Knife sharpening stone

- Chain and iron bar strong enough to hoist the carcass
- Scalding barrel or tank
- LPG cylinder with pipe and outlet/torch/flame for singeing as well as for boiling water

- Electric heater/immersion rod for boiling water
- Scrapers
- Raised platform/table for scrapping (if not done by hoisting the carcass)
- Thermometer for measuring temperature up to 70°C
- Torch or flame for singeing
- Aluminum/ stainless steel tray for displaying parts of pork
- Bucket/drum for collecting blood, offal etc.
- Basin for cleaning intestine
- Buckets, mug etc.
- Wardrobe for keeping clothes, mask, disposable gloves, apron, hat, towel etc.
- Shoe rack for keeping chappal/shoes outside the retail outlet
- Packaging materials
- Electric fly repellent



Thermometer for measuring water temperature



Large size aluminum tray for displaying pork



Basin for cleaning intestine



Electric fly repellent



Wardrobe for keeping cloths, apron etc.



Shoe rack

- Container for storing bristles/hairs, hooves, teeth of pigs, etc.
- Apron, towel, hat, disposable gloves and mask
- Tissue paper, food grade polythene, aluminium foil etc.
- There should be first aid box in the shop. They should preferably contain first aid bandages, ointment and other medicines for treating cut and burn injury.
- Electric immersion rod with a water jar for sterilizing the knives



Electric immersion rod for heating water



Domestic refrigerator inside the retailing unit and unit being fully covered with glass



Heart puncturing javelin



Cleaning of offal is done at the same area where meat is also being sold



Meat stall with all required amenities

2.2 Important things to be kept in mind for proper maintenance of infrastructure and equipments

- The floor should be cleaned thoroughly twice on everyday with disinfectant solution.
- The wooden block should be cleaned thoroughly before and after use.
- Pieces/particles of meat and dirty water should not be allowed to adhere in anywhere on the floor as it provides good environment for growth and multiplication of germs.
- Surrounding of the retail outlet should be kept dry and clean throughout. Stagnation of dirty water should be avoided. The drainage system outward the retail outlet should be made of concrete;
- The timber block, used for cutting meat contains particles of meat, blood, water, fat etc. which provide excellent nutrition and environment for growth of microbes. It should thoroughly be cleaned on every day at the closing of the business by scrubbing/scrapping the timber surface and cleaning with hot water.
- The sharp utensils, used for cutting meat should be cleaned thoroughly (including the handle) using soft detergents or hot water or both.
- Use separate set of clothes/brushes for cleaning food and non-food surfaces (e.g. the cloth used for cleaning the knife should not be used for cleaning tiles on the wall).

2.3 Fire hazard

For de-hairing of carcass, use of fire is an essential practice. Common sources of fire used by the pig slaughterer include fire wood to make hot water and LPG to de-hair. Fire hazard may occur anytime during the de-hairing process for which following preventive practices may be adopted.

- At the slaughter place, fix or keep fire extinguisher,
- Replace/fill the fire extinguisher at regular interval.
- Keep a drum filled with sand with proper label.
- Keep a First Aid box with ointment that is used for burnt skin.
- Stock the source of fire (fire wood, filled LPG cylinder, kerosene, etc.) away from the slaughter area.
- Do not keep LPG gas stove open when it is not in use.
- Do not ignore, if any leakage of LPG gas is suspected.
- Do not keep the fire wood get burning when it is not in use.
- Never smoke when you are using fire to de-hair.
- Use gas pipe of sufficient length between the points of connection with cylinder and fire released.



LPG burner is used for singeing carcass

Exposure visit to an improved retail unit:

Instruction for the resource person: Identify one pork retailing unit having almost all the required infrastructure and utensils with almost adequate adoption of clean and hygiene practices. Take the participants to this retailing unit and ask them to observe and note down what things are missing and what are available sufficiently there. Initiate discussion among the participants about the infrastructure and equipments in the pork retailing unit with their implications for safety issues of the pork sold.

Key recommended practices of the session

- Cover the floor and walls with white or light coloured tiles and the front side of the unit with glass panels.
- Retail unit should have adequate supply of water and electricity and have good drainage system.
- Ensure to have enough space for slaughtering (if done by the retailers), displaying, and storing of pork.
- There should have fire fighting equipments, first aid box etc.
- Have adequate arrangement for disposal of left-overs.
- Utensils used for slaughtering and selling should be of stainless steel/aluminums which is easy to clean.
- Do not use water absorbent surfaces (bamboo mat, wooden platform etc.) and polythene sheet.
- Should have adequate provisions (hot water, disinfecting solutions etc.) for cleaning and disinfecting the utensils and surfaces.

SESSION 3: Germs that Cause Pork Spoilage and Disease among Consumers

Session objectives

The session is designed to help you in gaining knowledge on the following

- How disease causing agents such as germs, parasites, etc. affect the meat quality and their sources and transmission?
- What are the diseases of pigs having zoonotic importance and problem of antibiotic and pesticide residues?
- The prevention and control option to be adopted by a pork retailer in the event of African Swine Fever (ASF)

Training Methods to be followed

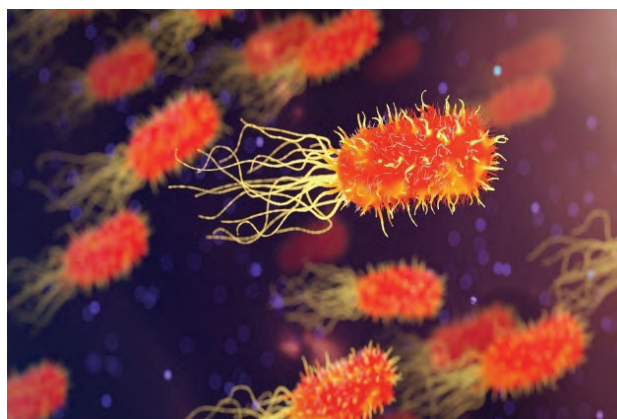
- Participatory discussion
- Group discussion

Training materials

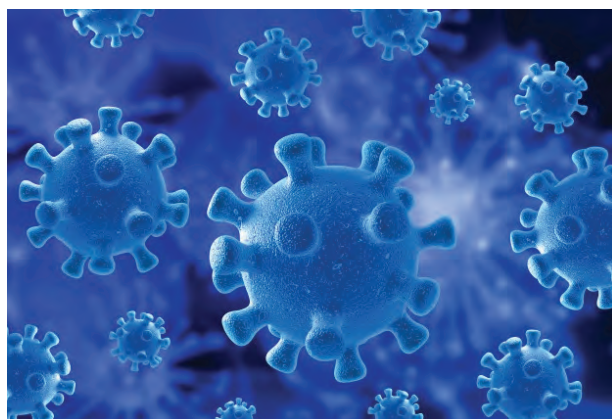
- Laptop, LCD projector and screen
- Videos
- Flip chart
- Manual and handouts
- Talcum Powder

3.1 What are germs?

- Germs are tiny living things that cannot be seen with naked eyes. It is visible only with the help of a microscope. A tip of a needle may contain millions of germs;
- Germs are broadly of two types: Bacteria and viruses;
- Germs are found abundantly almost in all living bodies and their surroundings i.e. soil, air, water and other materials if it contains dirt;
- Germs can reproduce quickly and they may cause disease. However, not all types of germs are harmful to the living being.



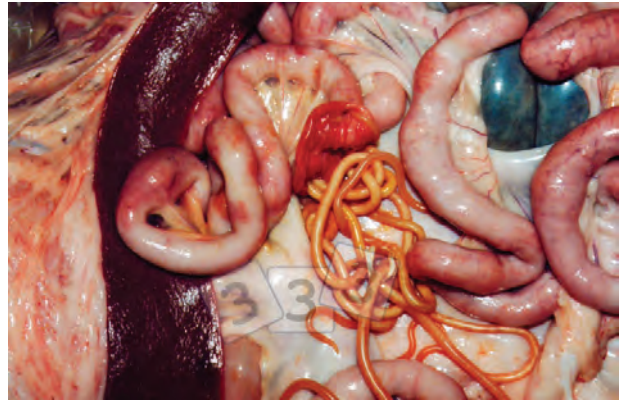
Bacteria



Virus

3.2 What are parasites?

- These are organisms that live inside or outside the body and feed on the host animals;
- They are of two types: Ecto-parasites (live on outside the body, e.g. lice, ticks, mites, etc.) and Endo-parasites (live inside the host's body, e.g. tapeworm, hookworm, Ascaris, etc.).
- It can be seen through naked eyes.
- If eggs/ worms are passed to human body through consumption of pork from affected pigs, it can cause disease in human (e.g. epilepsy, Ascariasis, etc.).
- Providing deworming drugs and vaccines (e.g. cysticercosis vaccine) to pigs at regular interval during the time of rearing and, adequate boiling of pork before consumption reduce the chances of occurrence of parasitic diseases.



Round worms of pig

3.3 Where do the germs come from to the meat and meat products?

- A carcass always contains some germs in it but number of germs may increase by many folds if it gets contaminated with gut contents, faecal materials, dirty water, equipments, utensils, handlers and the surrounding environment.
- Extent of contamination of carcass/ pork depends on hygiene and sanitation practices adopted during the process of pig production, slaughtering, handling, storage and selling of pork.
- Generally, pigs coming from well managed farms contain lesser germs. Number of germs increases rapidly if the pig is slaughtered, handled, stored and displayed under unhygienic condition.

3.4 What is zoonotic disease and why it is important?

Zoonotic diseases are those that are transmitted from animal to human or vice versa

Example of certain diseases of pigs having zoonotic importance are-

- **Cysticercosis/Taeniasis:** Transmitted to human from affected pigs with the worms through consumption of inadequately cooked pork having larvae of the worms. It may also get transmitted to humans during handling and cleaning of infected pork.
- **Ascariasis:** Transmitted to human from affected pig through consumption of pork of the affected pigs.
- **Japanese Encephalitis:** Transmitted to human through biting by mosquito to both the affected pigs and human.

3.5 Antimicrobial and pesticide residues

Antibiotic residues: To treat infectious diseases antibiotics are given to pigs. Antibiotics are also used as growth promoters along with the feed given to pigs. These antibiotic particles may remain deposited in pigs and slaughtering and consuming pork before the withdrawal period may cause the antibiotic particles enter to human body. The germs present in the human body exposed to these antibiotic particles in small doses and may develop resistance to the particular antibiotic. When they fall sick, these antibiotics might not work against the bacteria and fail to cure the disease. The precautions while using antibiotics are:

- Never try to treat pigs on your own.
- Veterinary practitioner should always be consulted for treating the animals. Please note that all the diseases don't require the treatment with antibiotics.
- The course of antibiotics (5 days in an average) should always be completed.
- Do not consume or sell the milk till two days after the completion of antibiotic course (withdrawal period).

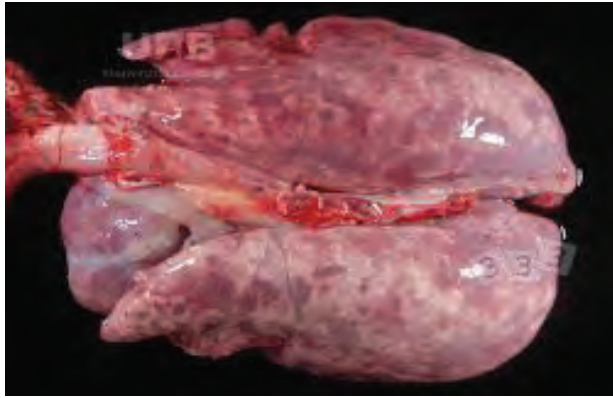
Pesticide residues: Pesticide is a chemical substance used for destroying insects or other organisms harmful to cultivated crops. When the pigs take plants or feed sprayed with pesticides, the particles of the pesticide get deposited in the pork.

- Pesticide causes a wide range of toxic effects in human beings leading to development of various ailments.
- Farmers should try to avoid using chemical pesticides on the farm. A number of organic pesticides can be used instead of chemical pesticides.
- Farmers should try to avoid giving your animal the feed that is sourced from an area where pesticides are used for cultivation of feed/fodder crops.

3.6 Preventive tasks in the event of occurrence of African Swine Fever (ASF)

How to suspect a pig suffering from ASF

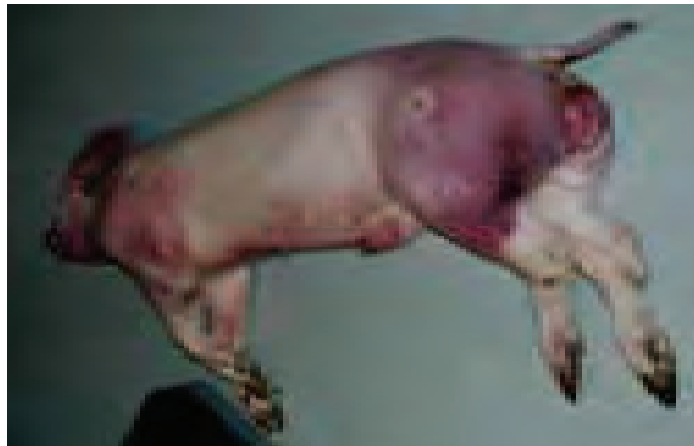
- If you find pig with high fever (41° - 42° C);
- If you see bloody froth in nose;
- If you see red patches on the skin of ears, abdomen, chest, tail and hind legs;
- If you see pig with difficult breathing with diarrhoea and vomiting (may be mixed with blood);
- After slaughtering, if you see the heart filled with excess of yellowish fluid;
- If you see the lungs filled with fluid;
- If you see an enlarged spleen with fragile condition.



Lungs filled with fluid



Enlarged spleen with fragile condition



Red patches on the skin of ears, abdomen, chest, tail and hind legs

What should you do if signs and symptoms of ASF are found?

- Immediately report about sick pigs to local Veterinary Officers and inform them the source of procurement of pigs for tracing infected farm.
- Neither sell any part of the affected carcass to the consumers nor consume by oneself or preserve in freeze for future use.
- Immediately halt your business for that day.
- Properly pack up the whole carcass, offal, blood organs, hairs etc. in a leakage proof polythene bag and take away to an isolated place in a covered vehicle and dispose of the carcass materials by 6 feet deep burial.
- Do the needful to clean and disinfect the transporting vehicle thoroughly with bleach/ caustic soda/phenyl/ /bleaching powder.
- Properly clean and disinfect the floor, platforms/slaughter surface, scalding tank, knives, wooden blocks, measuring balance, etc. using disinfecting agents like bleach/bleaching powder/hot water.
- Wash, clean and disinfect your personal dress, chappals, etc. followed by dipping in a disinfectant solution and then take bath thoroughly with soap water.
- Wait for order from local administration for running your business. Ideally you should stop procurement and slaughter of pigs and selling of pork until the disease subside in your area.

What should be done by a butcher to stop incidences of ASF in future?

- Inspect the health status of pigs thoroughly before purchasing
- Do not visit and buy pigs from the area marked as red or yellow zone for ASF
- Do not go inside a pig sty if it is not very essential. If essential, follow strict clean, hygiene and bio-security measures before and after entry.
- Do not take your vehicle inside the farm premises if it is not very essential. If essential, follow strict clean and hygiene measures.
- Do not purchase any pigs that are suffering from any disease, even if it is offered at lower price.
- Regularly disinfect the slaughter place and retail outlet with cleaning and disinfecting agents.
- Clean and disinfect the vehicles before and after carrying pigs/carcass/pork every time.

Why you should stop your business for others?

- By running your business today with infected pigs you can be an important transmitter of the deadly ASF disease and can contribute towards the death of thousands of pigs in your area for tomorrow and beyond.
- Today you can avoid losses by selling affected carcass but tomorrow you may not find any pig to run your business.
- You can destroy the livelihood of thousands of poor pig rearers in your area, but the choice is yours.

Group discussion: How germs spread disease

Instruction for the resource person:

- Hide a small amount of flour powder or talcum powder in your hand
- Ask participants, "Have you ever seen germs?" (No.) Say, "That's right, because germs are so tiny that we can't see them with our eyes"
- Tell them that you brought some pretend germs, and sneeze into your hand so that the flour/ talcum powder is spread in your hand
- Touch a few people wearing dark clothing, and touch a few participants' hands. The participants should be able to see the powder traces
- Say "If these were real germs, they could make you sick"
- Make the participants with powder on their hands to shake hands with participants who have none.
- Explain how germs can pass from person to person and role play proper hand washing

Key recommended practices of the session

- Never buy a pig having fever or showing symptoms of other diseases.
- If you see cotton seed like follicle in the muscle/beneath the tongue/eyelids of the pig, avoid/ discard it for slaughtering.
- Observe for discoloration with reddish/purple in abdomen, ears, thigh, extremities, etc. and avoid/discard it for slaughtering, if found any.
- Try not to come close/direct contact with the diseased animal, infected tissues and discharges of the animals.
- Neither sell the pork if any abnormal signs are noticed in the pig's internal organs after slaughter nor consume by yourself.
- Never treat pigs with antibiotics of your own and always complete the antibiotics course as prescribed by the veterinarian only.
- If suspected with ASF infections immediately inform the local veterinary officers.

SESSION 4: Methods of Transportation of Live Pigs and Pork for Selling Purpose

Session objectives

The session is designed to help you in gaining knowledge on the following

- The best practices for hygienic and hassle free transportation of pork/carcass.
- What are the different stress factors that affect the meat quality of pork and precautionary measures to be taken;

Training Methods to be followed

- Participatory discussion
- Experience sharing

Training materials

- Laptop, LCD projector and screen
- Videos
- Flip chart
- Manual and handouts

4.1 Points to be considered while buying pigs for slaughtering and selling

- Pigs to be slaughtered should be completely free from any disease.
- Pigs under treatment should not be purchased for slaughter.
- Pigs with sign of cysticercosis should not be purchased for slaughter.
- Pork retailers should not go inside any farm if it is not very essential. If essential, he/she should always clean his/her hands and feet with soap and water before and after entry.
- Pork retailers should not take their vehicle to farm premises as it may transmit disease.
- Pigs should not be left thirsty before slaughtering, enough drinking water should be provided.
- Pregnant animals should not be purchased for slaughter.
- Pigs should not be put under stress during transportation by beating or by transporting during hot hours of the day.

4.2 Regulation associated with transportation of pigs / pork

When pigs are to be transported within the state and beyond, transporters should check and comply with the state regulations related to animal transport. Knowledge of and compliance with such regulations well in advance of transportation would help in avoiding unnecessary harassment at the time of transportation.

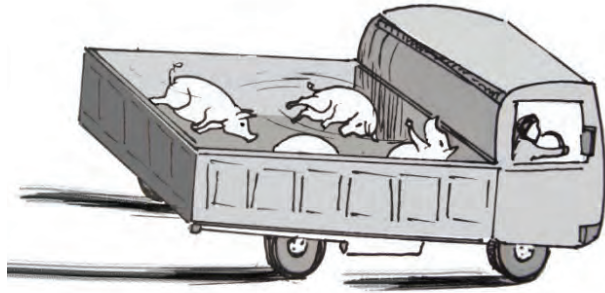
- The vehicle meant for livestock transportation should have necessary road permits, driving license, insurance etc. and required facility for transportation (e.g. partition materials, bedding material etc.).
- Proper health certificate of pigs should be obtained from local veterinary officer.
- The traders should have trade license to sell pigs/pork from municipal corporation/town committee/panchayat/bazar committee/others.

4.3 Points to be considered during transportation of live pigs for slaughter

Improper handling of pig prior to and during transportation may result in excessive shrinkage loss, wound, injury, crippling loss, occasional death, etc. This may lead to rejection of the pig or dissatisfaction in receiving the same and chances of increasing microbial load in pigs.

During transportation of pigs, following precautions should be taken-

- Transporter should remove the previously used bedding materials (sand, straw, etc.) and then clean and disinfect the carrier. Generally pigs are transported with about 1 inch (2.5 cm) sand-bed in summer. In winter straw is placed on top of the sand-bed.
- The transporter should use vehicles designed specifically for livestock transport only.
- Care should be taken that pigs are properly loaded. Both overloading and under loading should be avoided. Partition should be used in trucks, if required between the pigs.
- Breaking of journey is important. Halting time and place should be finalized before starting the journey. Any last minute hassles should be avoided.
- Animals should be fed and watered properly prior to loading. Pigs that are transported should either be fed lightly or should be fed 12 hours before loading depending on the distance, temperature and treatment upon arrival.
- Over-fed pigs or watered in excess at the time of loading defecate and urinate excessively leading to floor becoming dirty and slippery and the pigs feel uncomfortable. Such pigs shrink heavily and present an unattractive appearance when unloaded.
- Efforts should be made to keep the pigs quiet. Hot, excited pigs experience more shrinkage and are more prone to injury or death.
- Transporter should never lose temper and should never hurry. Pigs should not be beaten with objects such as pipes, sticks, canes or forks; instead a flat, wide canvas slapper or something like broom should be used.
- In mixed loading of animals (consisting pigs, cattle, goat, etc.) in the same truck/van, each class of animals should be partitioned separately. Also, boar, sow, piglet should be properly partitioned/sub-partitioned.
- Vehicle should be covered to protect the pigs from sun during the summer and cold during winter. Shrinkage and death losses are higher in too hot/too cold weather than in normal weather. Pigs should preferably be transported at night or in the evening during summer. If required, the sand-bed should be made wet during hot weather.
- The truck is to be driven carefully. It should be slowed down on sharp turns and sudden stops are to be avoided.
- Protruding nails, bolts and sharp objects in truck/van should be properly checked and removed wherever found.

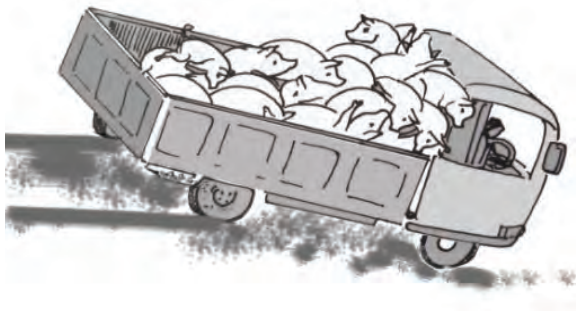


Consequences of loading only a few pigs in a truck for transportation

- Unloading should be done slowly and carefully. Pigs must not be dropped on the ground. The truck should be slowly and squarely positioned against the unloading dock.



Pigs shall not be transported during hot sunny hours of the day



Consequences of a sudden stop of an overloading truck



Pigs should not be unloaded inhumanly

4.4 Transportation of pork

Pork retailers mostly carry the carcass from the place of slaughter to the market by bicycle, bike, auto van, auto rickshaw or by pulling cart. Some big traders carry several carcasses from the place of slaughter to the market by mini truck and deliver the full/part of carcasses at different retail outlets. In transporting the carcasses following certain clean and hygienic practices should be followed:

- Vehicle/bicycle/motorbike should be cleaned before and after transportation.
- Never put the carcass on empty unmated floor or foot rest.
- Do not wrap with plastic that increases the temperature of the carcass owing to which germs may increase rapidly and can spoil the meat early. Also, plastic cannot be cleaned properly.
- Use a bigger tray of stainless steel/ aluminium over the floor of the vehicle to keep carcass. If carcass is transported by bicycle/motorbike, fix one oval type container on it. Cover the same with a clean banana leaves/aluminium foil to prevent exposure to dirt, dust, fumes, etc.



Pork being transported in a passenger autorickshaw without any hygienic system in it

- Clean the tray/container thoroughly before and after carrying;
- Preferably use vehicle (such as auto van) that is covered from all sides;
- The vehicles used for transportation of pork/carcasses should not contain other materials,
- Under no circumstances carcass should come in contact with dirty hands, chappals, shoes etc.;
- For long distance travel prefer to use vehicles with refrigeration facilities;
- The vehicle or the bicycle/motorbike should not be parked near to a drain and garbage releasing obnoxious odour, industrial factory emitting toxic gases and fumes, etc.;
- Travel through the shortest route and during cooler hours of the day taking minimum possible time;
- Utensils used for transportation should be properly cleaned and dried;
- The carcass/pork should not be touched with bare hands;
- While transporting, avoid chewing of beetle nut and tobacco, smoking, spitting etc. Also do not cough or sneeze over the meat;
- Try to transport in cooler hours of the day;

Practical exercise

Experience sharing: Rules affecting transportation of pigs

Instruction for the resource person:

The resource person will identify one or two pork retailers (if any) who faced difficulties/problems in transporting live pigs and will ask them to explain their key learning. Similarly, the resource person will ask one or two pork retailers to explain how they transport the carcass. The resource person will note down the key learning points in a flip chart and discuss those with the participants.

Key recommended practices of the session

- Stay aware about the prevailing regulations on transportation of pigs within and outside the state.
- While transporting pigs change the previous day's bedding materials (sand, straw, etc.) with new one.
- Always avoid under/over capacity loading.
- Feed the pigs lightly before transportation.
- Put partition/sub- partition in the truck as per number, sow, piglet, diseased pig, etc.
- While transporting pork/carcass, clean the vehicle properly and use bigger stainless steel/ aluminium tray over the floor of the vehicle and cover with clean banana leaves or aluminium foil.
- Never carry other materials with pork/carcass and handle it with clean hands.

SESSION 5: Clean and Hygienic Practices Required at Pork Retailing Outlets

Session objectives The session is designed to help you in gaining knowledge on the following
<ul style="list-style-type: none">• Various sources of meat contamination during slaughter and considering factors for wholesome meat production.• The process of cleaning and disinfection of utensils, cleaning of wooden block and proper disposal of offal.• Maintaining personal health and hygiene
Training Methods to be followed
<ul style="list-style-type: none">• Participatory discussion• Illustrations• Role play
Training materials
<ul style="list-style-type: none">• Laptop, LCD projector and screen• Videos• Flip chart• Manual and handouts

5.1 Contaminations of meat, its sources and wholesome meat production

Contaminations can occur in many ways, such as butcher's hand, knife, meat cutting timber block, skin of animal, internal organs, soil, water, air, environment (dust, dirt, roadside, drain), floor, faeces, urine, utensils, dirty cloths, fly etc.

Some potential sources of contamination during slaughtering/pork retailing

- Dirty surroundings with presence of open drains, open sewage, factory emitting smokes or releasing some chemical/other wastes etc.;
- Poor quality materials (e.g., bamboo mat, wooden plank, leaves, etc.) that are commonly used at the time of slaughtering and displaying pork could be the main source of contamination as it is difficult to clean these thoroughly;
- Poor personal health and hygiene (e.g. long moustache, dirty hands, long finger nails, sweating, sewing tobaccos, etc.) of pork retailers;
- Dirty equipment and utensils used for various operations of slaughtering and pork retailing;
- Flies, mosquitoes etc. in the outlet and around;
- Over scalding of the carcass which may lead to early deterioration of pork quality;
- A storage place or storage material which is not suitable for the purpose;
- Storage longer than the required time without refrigeration;
- Time between the last meal (feed taken) of the pigs and the slaughter of it - a full stomach poses a higher risk of puncture during dressing and contamination of carcass;

- When animals are extremely fatigued or exhausted at the time of slaughter, it will lead to incomplete bleeding resulting in the germs from the gut or intestine entering to the blood stream more rapidly and contaminate the meat of such type of animals;
- Dirty clothing and hand of the workers and poor physical facilities in the stall are the potential sources of contamination;
- Mechanical removal of the hair by plucking after scalding is a source of contamination;
- Polishing the carcass with stainless steel scrapers or nylon brushes contribute spreading the germs;
- Spitting near the carcass, carrying carcass on unmated floor of vehicle, getting contact with unclean clothes, hooks or containers contaminate the carcass/pork;
- Pork stored under unhygienic condition and/or faulty handling of the same in meat markets, shops and processing plants cause contamination of meat;
- Dogs, birds etc. straying around the retailing space may carry germs;



Carcass gets contaminated from the dirty feet of the butcher



Pork may contaminate from various sources

So, use of proper sanitation is the best approach for limiting the microbial contamination.

Apart from taking care for not contaminating the pork by following the hygienic practices during handling of carcass and pork as mentioned above, one should also take note of the following points to produce wholesome meat.

- Pigs should not be slaughtered immediately after transportation, rather it is allowed to take rest for some time.
- Never over-fed the pigs before slaughtering. The recommended time between the last meal of the pigs and starting of slaughter should range from 16 to 24 hours.
- Ideally pigs should be brought one or two days prior to the day of slaughter in order to maintain adequate resting and maintaining required time for last meal.

- Amount of time required for resting every animal is dependent on the nature of climate (hot or cold).
- Distance travelled, mode through which transported and general health of the pig. Sufficient drinking water should be made available to pigs.
- Pigs intended for immediate slaughter, without a rest period, should be sprayed with water to accelerate cooling.
- Slaughtering should be done without causing much excitement to the pigs. Slaughtering should not be done in presence of other live pigs.
- Allow only the experienced worker to carry out slaughtering and cleaning process.
- Pigs should be examined before slaughter to eliminate weak, debilitated and diseased ones.
- Improper and insufficient bleeding of pigs (i.e., leaving a relatively high amount of blood in the muscle) results in non development of necessary degree of acidity in pork. In such cases the shelf life of pork is reduced. Thus, proper and sufficient bleeding from the carcass must be allowed.
- An unskilled and untrained slaughterer should not be assigned to perform the job of evisceration as it may make the carcass contaminated from the intestinal content. One way of stopping such contamination is by sealing off the rectum with a plastic bag immediately after it has been removed from the carcass.
- All cleaning operations like dressing of carcass should be separated from unclean operations like cleaning of stomach or guts, so as to prevent cross-contamination of the carcasses.
- Properly dispose of the leftover by deep burial or other means. Do not allow dogs, cats etc. to eat and carry the leftover.
- Carcass should be examined to detect, remove, condemn and destroy all diseased or unfit part of carcass for human consumption.
- While separating the condemned portion, great care should be taken to ensure that edible portion of the carcass do not get contaminated.
- Refrigeration facilities should be provided during storage and transportation of carcass/ pork for safe consumption of it.
- Pork should be stored in fly-proof containers/ environment, and if these are to be kept for a long time before their sale they must be refrigerated, especially during summer.
- Avoid rubbing blood (to make it attractive) in the whole or part of the carcass ready for retailing.

5.2 Cleaning and disinfection of Utensils

- Step 1: Thoroughly remove dirt of utensils with water;
- Step 2: Clean the utensils with soap solution or antiseptic solution like Lysol, Crisol etc.
- Step 3: Dip the utensils as well as knife in hot water (may keep a hot water jar/ electric immersion rod)
- Step 4: Dry the utensils by hanging on a hanger



Simple equipment used during slaughter of pigs

5.3 Cleaning of wooden block that is used for cutting meat

For cleaning of wooden blocks following process should be followed.

Following steps should be followed for cleaning and disinfection of utensils.

- Step 1: Scrape the upper layer of surface of the wooden block with a knife to remove residual meat particle occasionally adhered to the crevices of the wooden block. This practice is very much important as meat itself is a very good medium for growth and multiplication of germs.



Scrapping of the wooden block after closure of sale

- Step 2: Wash the wooden block with edible alcoholic solution like acid alcohol (it contains Hydrochloric acid to reduce pH and alcohol to act as antiseptic).
- Step 3: Dry the wooden block with a clean piece of cloth.

5.4 Cleaning and disposal of offal

- Collect the offal immediately after slaughtering.
- Wash the offal with normal tap water.

- In case of intestine, squeeze out the intestinal contents and wash both the inside and outside part of the intestine with normal tap water.
- In case of stomach, discard the contents and wash the stomach with tap water. Warm at 40-45° C to scrap or remove the first lining i.e. the mucous membrane of the stomach. Again wash the stomach properly.



The local practice of scalding for removing the mucous membrane of the stomach

- Burial is the best way of disposing the offal. But it should be done at a place which is considerably away from the residential area.

5.5 Personal health and hygiene of the pork retailers

The person retailing pork -

- Should not suffer from any disease during retailing pork, more particularly infectious diseases like covid-19, flu, cough, cold, tuberculosis, skin diseases, etc.);
- Should not have any kind of wound or open soar in hands;
- Should not smoke, drink alcohol, chew tobacco, eat beetle nut, etc. during retailing of pork;
- Should always wear clean clothes;
- Should wear mask, apron, disposable gloves and cap during pork retailing;
- Should not cough or spit inside the retail unit. He/she should go little away to cough/spit. May also use tissue paper to cough and then clean his hands with soap and water;
- Should have trimmed nails;
- Should shave/trim beards/moustache regularly;
- Should wash hands with soap solution frequently and dry the hands with clean towel;
- Should not display pork at the level of feet. Pork should always be displayed on a raised and clean platform.



Coughing on top of the pork during selling



Chewing beetle nut and spitting out, a very bad practice



Personal clean and hygienic measure

5.6 Hygiene and cleanliness to be maintained at the outlet

- Clean the display platform frequently with a clean cloth or tissue paper;
- Do not allow the pork to get exposed to direct sunlight;
- Do not expose all pork to be sold, expose a part of it and remaining pork is to be put in a domestic refrigerator until the displayed pork sold out;
- Do not mix fresh pork with leftover pork of previous batch;
- Do not sell pork if the quality has deteriorated or not fit for consumption;
- Put the knife on hot water or keep it in dry place after cleaning, if the knife is not in use;
- Clean the unit including floor, platform, wall tiles, glass cover etc. thoroughly 3/ 4 times a day with commercially available cleaning and disinfecting agents;
- Never leave pork particles to adhere to anywhere after cleaning;

- If leftover pork needs to be stored overnight, store it in deep freezer. Pork can be weighed and packed in food grade polythene and can be sold as frozen pork;
- Door of the refrigerator/ deep freeze shall not be kept open for long;
- There shall be a fly repellent inside the outlet;
- The platform where pig is slaughtered should be cleaned and disinfected every day;
- The carcass should not be allowed to touch the ground/soil to prevent contamination.
- Windows, ventilators etc. should be covered with wire net;
- Pork retailers should leave his shoes/chappal outside the outlet. Should use separate chappal for wearing inside.
- The same cleaning clothes or brass should not be used for cleaning for meat and non-meat surfaces/equipment.

Role play: Good personal hygiene

Instruction for the resource person: Ask two of the participants to play the role of a consumer and a pork seller. Ask them to imagine that while selling pork the pork seller is wearing dirty clothes, keeping long moustache and occasionally coughing over the pork displayed. Ask the consumer going to buy pork to express his/her reaction after seeing this. Ask the other participants to discuss on the overall impression on the seller and consumer's decision to buy pork.

Key recommended practices of the session

- Always clean all the utensils and equipments used during handling of carcass/pork daily.
- Always clean the carcass and equipments using clean and drinkable water.
- Do not use the same cleaning cloth or brush for cleaning meat and non-meat surfaces / equipment.
- Do all cleaning operations like dressing of carcass separately from unclean operations like cleaning of stomach or guts.
- Properly dispose the leftover by deep burial or other means. Do not allow dogs, cats etc. to eat and carry the leftover.
- Store the pork in fly-proof containers/ environment.
- Avoid rubbing blood (to make it attractive) in the whole or part of the carcass ready for retailing.

SESSION 6: Standard Process of Slaughtering Pigs

Session objectives The session is designed to help you in gaining knowledge on the following
<ul style="list-style-type: none">• The different steps involved in the slaughter of pigs• Different popular cuts of pigs for segregation/grading of pork
Training Methods to be followed
<ul style="list-style-type: none">• Participatory discussion• Illustrations and photographs• Exposure visit
Training materials
<ul style="list-style-type: none">• Laptop, LCD projector and screen• Flip chart• Manual and handouts• A live pig

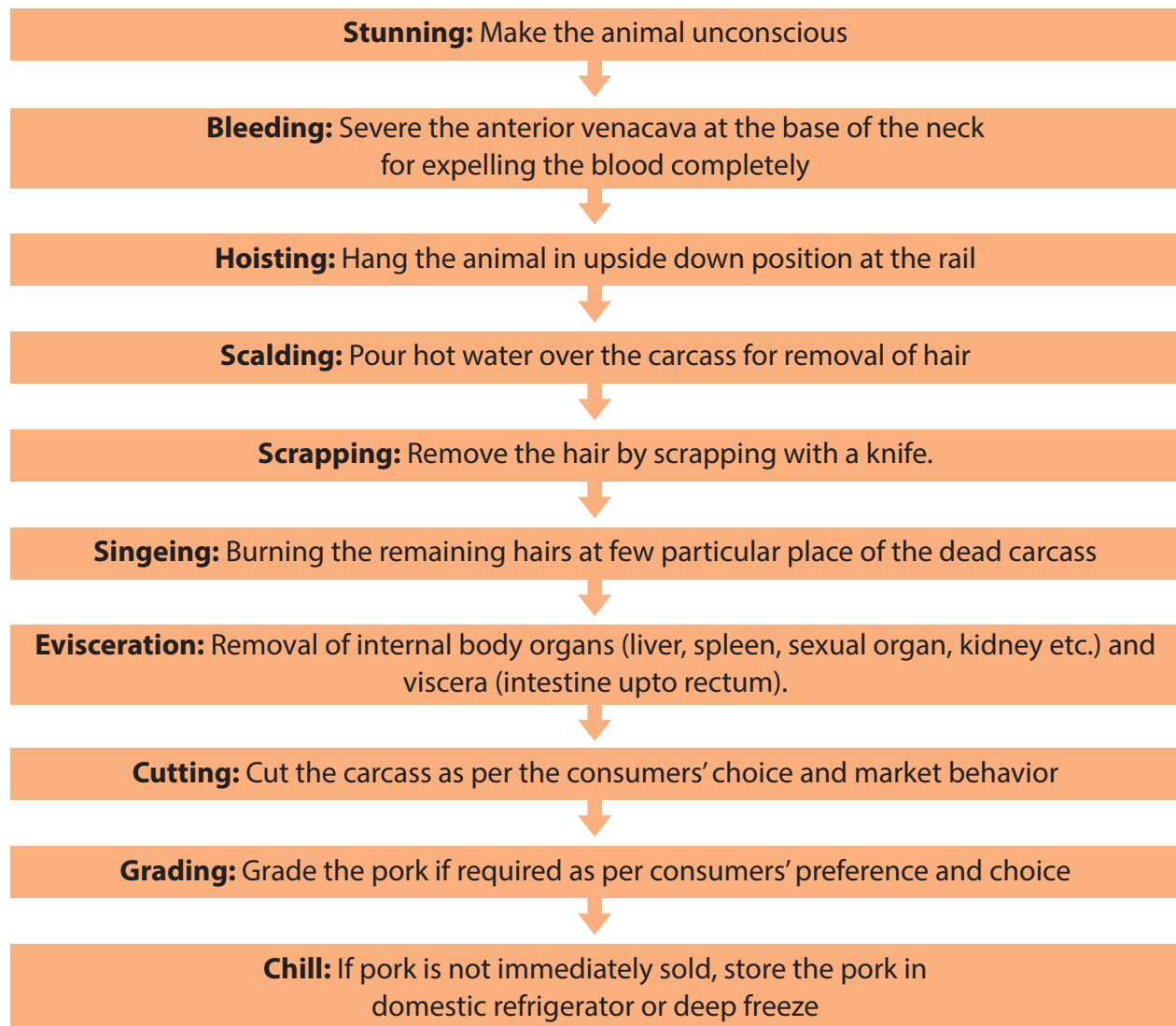
6.1 Humane method of slaughtering pigs

Pork retailers who slaughter pigs and sell pork should know some basics of the scientific method of slaughtering pigs. The main objective of this method is killing of the pigs in such a way that they do not suffer from much of pain (that is why it is referred to as humane method of slaughtering) and the slaughtering process is done under clean and hygienic conditions. The specific details of humane method of slaughtering are stated below:

- Pigs must not be treated cruelly.
- Pigs must not be stressed unnecessarily.
- Bleeding must be as rapid and as complete as possible.
- Damage to the carcass must be minimal.
- Slaughter method should be hygienic, economical and safe for the slaughterers.

6.2 Steps of slaughter

Following steps are followed for slaughtering pigs.



6.2.1 Stunning:

To avoid the risk of cruelty, animals must be stunned i.e. to make unconscious before they are actually bled out to death by way of severing the vein. Unconsciousness makes severing the vein much easier for the operator. The animal must be unconscious long enough for vein severing.

Different types of stunning methods are:

- Electrical stunning
- Gaseous stunning
- Mechanical stunning or knocker

Electrical stunning: done by sending an electric current through the brain and/or heart of the animal before slaughter. Current passing through the brain induces an immediate but non-fatal general convulsion that produces unconsciousness. It is not practiced in the NE region.

Gaseous stunning: animals are exposed to a mixture of breathing gases (e.g. argon and nitrogen) that make the pigs unconsciousness (or even death through hypoxia or asphyxia). The process is not instantaneous and not practiced in the NE region

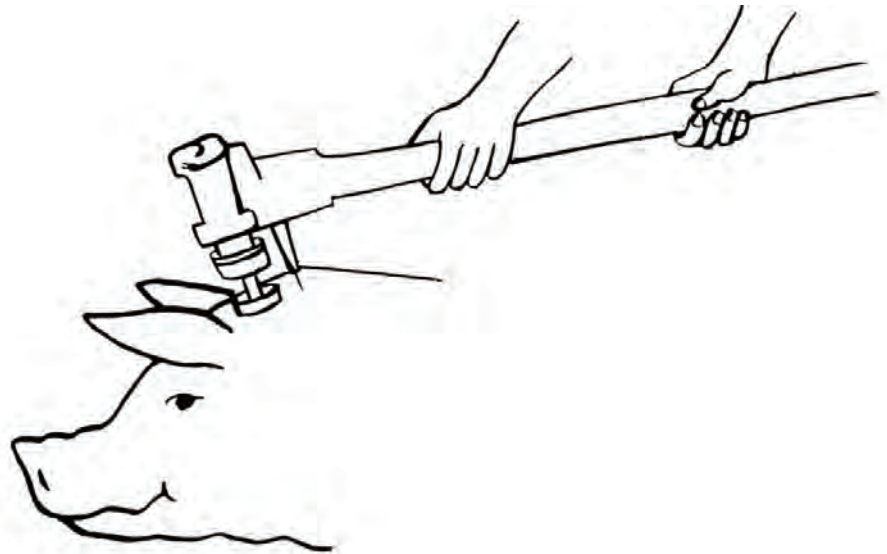


Electrical stunning

Electrical stunning and Gaseous stunning is not done in North-East Indian states.

Mechanical stunning or knocker:

Mechanical stunning or knocker is the most common method of stunning. Here, a direct blow is made on the skull. The blow must be dealt with sufficient force so that the skull is crushed in a moment, causing instantaneous unconsciousness. One must not think of using drugs to induce unconsciousness in pigs for slaughter as unacceptable residues would remain in the pork.



Mechanical stunning

Traditional Method

In traditional method, killing and bleeding is done through heart puncturing by a pointed javelin as shown in the figure below.



Heart puncturing using a javelin or a long iron rod

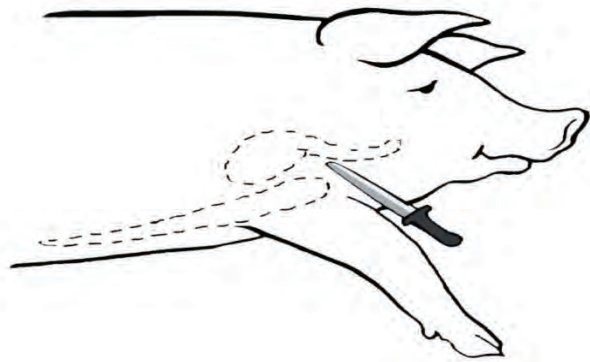
6.2.2 Bleeding

Pigs are usually bled by puncturing/severing the major blood vessels (anterior venacava for pigs), at the base of the neck with long whole knife through which blood oozes out.

- The objective of bleeding is to kill the pig with minimal damage to the carcass and to remove blood as quickly as possible since blood is an ideal medium for the growth of bacteria. It is desirable to scrape away any dirt and hair from breastbone to throat.
- The sticking point for pigs is in the centre of the neck and just in front of the breastbone. Care must be taken not to puncture the chest cavity or it will fill with blood.
- To reduce contamination by the scalding tank water the cut should be as small as possible.

Puncture should be done in a proper way, -

- The point of the knife is inserted at an angle of about 45° , about 2 inches (5 cm) in front of the breast bone, immediately over the middle line.
- An incision is made down towards the jaw with the knife penetrating to a depth of 5 to 6 inch (12 to 15 cm), depending on the size of the pig. If carried out properly, the carotid arteries and the jugular vein will be cut;
- If the animal is punctured repeatedly due to inaccurate puncturing, large areas of tissues may get damaged and bleeding may be incomplete;
- Incomplete bleeding increases the amount of residual blood in the carcass and the lean (the meat that is almost devoid of fat) of the carcass may appear unduly dark and the fat become streaked (blood spots) with blood.



Severing the arteries of pig for the purpose of bleeding

6.2.3 Hoisting

After puncturing the vein, pig should be hoisted on a hanging stand made out of strong wood/ concrete post and an iron rod with a strong iron hanger. This will facilitate easy and complete bleeding. If it is not possible, pig should be placed on a flat aluminum or stainless steel sheet pasted on a table or kept in an elevated space.



Pig hoisting during slaughter

6.2.4 Scalding and de-hairing of Pigs

- The carcass is treated with hot water to loosen the hair in the follicles (Scalding- it is done in water at around 60°C for about six minutes). About 8 minutes is sufficient to loosen the hair and make its removal with the scurf.
- Scalding time and temperature of water is important as hair will not be loosened at too low temperature and the skin will be cooked at too high temperature. The simplest equipment consists of a tank into which the pig is lowered by a hoist.



Carcass is cleaned on a dirty ground and washed using dirty water



Scalding is being done in scalding tank and in a metal tray

- To check the effectiveness of the scald, rub the skin with the thumb to see if hair comes away easily. In the effort of trying for complete avoidance of contamination, scalding water should be changed frequently, pigs should be as clean as possible at sticking, and bleeding should be fully completed before immersion.
- De-hairing should be done with a specially formed scraper (bell scraper or knife). If the scald is effective all the hair can be removed by this manual method.



Bell hog scraper

- The remaining hairs (if any) are to be burnt in mild flame (singeing) and to give a clean and attractive appearance of the carcass. It may be done with a hand-held gas torch or by using straw. Burning of hairs with LPG burner is most commonly used in NE India. Some rural pig slaughterers burn hairs by using straw.
- After singeing, black deposits and singed hairs are to be scraped off and the carcass is thoroughly cleaned before evisceration begins.



After singeing scraping off to remove black deposits and residual hairs

6.2.5 Evisceration

- Care must be taken in all operations not to puncture the viscera. Loosen and tie off the rectum.
- Cut along the middle line through the skin and body. Cut through the pelvis and remove the bladder and sexual organs.



For evisceration, incision is given along the middle line through the skin and body



Incomplete bleeding is blood being removed by hand in traditional method during evisceration

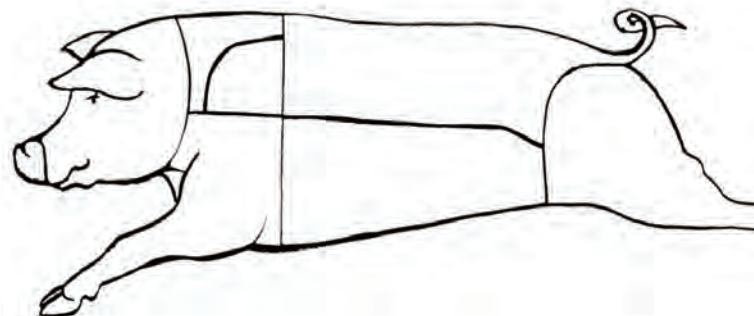
- In males, the foreskin must not be punctured as the contents are a serious source of contamination. Carefully give incision around the prepuce area and remove it including the prepuce. All these organs are considered inedible.
- Remove the abdominal and thoracic viscera intact. Avoid the same contacting the floor or standing platform.



Abdominal and thoracic viscera are removed intact, but kept in contact with the carcass and the floor

6.2.6 Cutting and grading of pork

- Preference of consumers varies for different parts of the carcass e.g. lean, fat etc. Accordingly, demand for different parts also varies. For instance some parts like ham, loin, bacon have more demand in market (as these are meaty parts) than those of snout, head, extremity (bony part). The different demand pattern for parts of the carcass leads to choosing different pricing options for pork retailers.
- The cuts having higher percentage of meat (i.e. meaty part) than bone part are termed as costly cuts. These are- ham or leg part, loin (back muscle, parallel to vertebra) and belly area/ Bacon.
- Different meat products can be made from different cuts.



6.2.7 Different popular cuts of pork

Wholesale cuts: Bigger pork cuts for selling pork at wholesale price

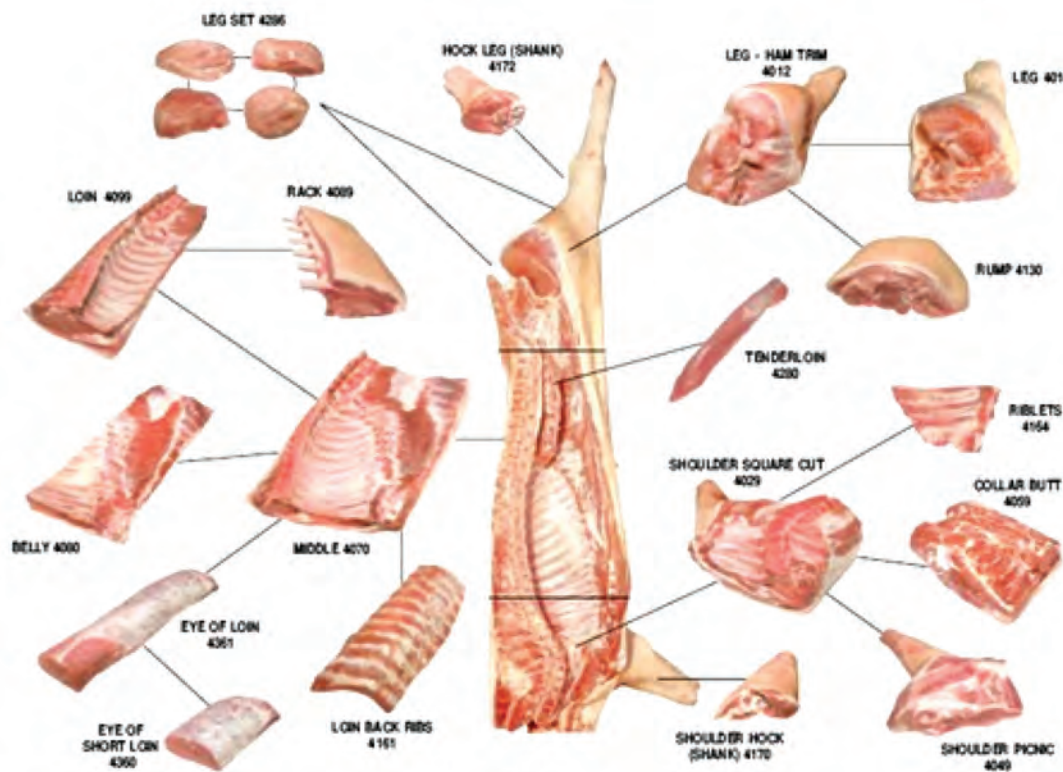
- Ham
- Loin

- Bacon
- Boston Butt
- Picnic
- Jowl



Different pork cuts at a slaughter place

Retail cuts: Smaller pork cuts for selling at retail price



Various retail pork cuts

All these steps mentioned above are thoroughly followed in a scientific slaughterhouse. Pork retailers may not be in a position to follow all these steps as shown but principle of clean and hygiene must be followed both in slaughter place and retail outlet.

6.3 Dressing percentage of meat yield

Dressing percentage is a comparison of the carcass yield in relation to the live weight and is calculated as follows:

$$\text{Dressing \%} = \frac{\text{Weight of the dressed carcass}}{\text{Weight of the live animal}} \times 100$$

Dressing percentage is influenced by stage of maturity, degree of finish, breed and intestinal content of the animal. Saleable parts (blood, head, lower legs etc.) of carcass are more in Assam due to demand from different types of customers giving relatively higher dressing percentage than usual. As the animal grow older, proportion of muscle and bone decreases and fat increases.

Table 1: Dressing percentage and composition of pig carcass

Species	Dressing %	Composition of carcasses		
		Meat%	Fat%	Bone%
Pig	70-75	40-50	30-40	10-15

Source: Handbook of Animal Husbandry (ICAR)

Exposure visit to a good slaughter place

Instruction for the resource person: The resource person will take the participants to a nearby slaughter place (if any). He/she will show the participants the present practices and steps of slaughtering pigs and having popular pork cuts, explaining clearly the implications of following those. For any wrong doing by the slaughterer, he/she will demonstrate the correct method of slaughtering it explaining the beneficial effects.

Key recommended practices of the session

- Try to maintain a time gap of 16 to 24 hours between the last meal of the pigs and starting of slaughter. .
- Give the pigs sufficient rest before slaughter and provide sufficient drinking water.
- Do not slaughter pigs in presence of other live pigs.
- Do not cause excitement or panic or pain to pigs before slaughtering.
- Always do the complete bleeding after slaughtering.
- Maintain the scalding time in such a way that over and under scalding is avoided.
- Cut the pieces of pork as per the preference/choice of the consumers

SESSION 7: Preservation, Packaging and Value Addition of Pork

Session objectives
The session is designed to help you in gaining knowledge on the following
<ul style="list-style-type: none">• Different preservation methods based on the type of users of pork, selection of proper packaging materials and hygienic packaging of meat• Different value addition options for pork• How to be more profitable by the adoption of best by-product marketing
Training Methods to be followed
<ul style="list-style-type: none">• Participatory discussion• Illustrations and photographs• Experience sharing
Training materials
<ul style="list-style-type: none">• Laptop, LCD projector and screen• Flip chart• Manual and handouts

7.1 Preservation of pork

Spoilage of pork happens mainly because of four factors:

- Natural process of gradual breakdown of the body tissues,
- Rapid increase of microbial load after slaughter
- Higher storage temperature
- Poor handling and poor packaging materials

Pork which is handled more frequently and stored at room temperature for longer time may have more germs. Therefore, it should be sold immediately after slaughter or otherwise stored in lower temperature.

Some common methods of preserving pork

Storing for short duration

Icing: Pork is stored in a thermocol box with ice for short duration. This should always be kept in the retail outlet to store pork even for few hours

Refrigeration (in domestic refrigeration)

- Small quantity of pork can be preserved in domestic refrigerator. The temperature at which meat is stored is usually in 0 to 40° C at which the microbial growth is inhibited.



Pork preserved in a refrigerator

To reduce spoilage of pork in the refrigerator, take note of the following:

- Handle pork as less as possible;
- Place the pork in the refrigerator, immediately after receipt;
- Open the refrigerator door as less as possible and for as short time as possible;
- Do not overload the refrigerator beyond the capacity recommended by the manufacturer;
- Cleanse the chamber periodically, and as soon as possible after finding spoiled pork which was stored in it;
- Maintain the desired level of temperature, with a minimum of fluctuation;
- There should be power back up arrangement in the event of power failure;

Preservation for longer duration

Freezing: Pork freezes at -1.6°C , but for storage purposes, -18°C is considered as the critical temperature. Pork could be preserved for longer duration at freezing temperature.



Pork preserved in a Deep freezer

Thawing: Thawing is done to bring the temperature of the frozen or refrigerated pork above the freezing point, or to make it unfrozen. Frozen meat gets harder. To soften it, meat should be put in a container and submerge it under water in room temperature for few minutes, when get softened cook it as early as possible.

(Thawed meat deteriorates quickly for which it must be kept at about 10°C and consumed as soon as possible)

7.2 Packaging of pork

- Packaging is done to preserve products from physical changes, microbial contaminations and dust, and protect from environmental factors affecting quality and nutritive value.
- Good packaging is an important pre-requisite for attaining greater consumer satisfaction and increased demand. Meat packaging should be clean, attractive, durable and impermeable to flavour and odour.
- Use of newspaper or ordinary polythene for packaging of meat poses health risk and affects negatively the shelf-life of meat. It should only be packaged in food grade polythene which is available in the market.
- Fresh pork requires presence of oxygen for maintaining colour for consumers' satisfaction with minimum water loss.
- Frozen or processed products require more sophisticated and extensive packaging because it needs to be stored for longer periods than refrigerated or fresh pork.

Vacuum packing of pork and pork products is widely practiced commercially for frozen pork.

7.2.1 Characteristics of a good packaging material

- Moldable and pliable at low temperature.
- Flavorless and tasteless.
- Transparent
- High wet strength.
- Resistance to tearing.
- Adaptable to labeling.
- Attractive

7.2.2 Characteristic of packaging materials for wrapping fresh, frozen and cured pork

Fresh meat

- Transparent
- Highly oxygen permeable to give bright red or pink colour to pork through formation of oxymyoglobin;
- Moisture proof, grease proof, flexible and durable at refrigerated temperature

Frozen Meat

- Must be oxygen impermeable to minimize rancidity (production of off-flavour and odours) and freezer burn (elimination of moisture from the surface of meat leaving white patches);
- Moisture proof and impermeable to flavour and odour;
- Durable at refrigerated temperature.

7.2.3 Packaging of meat and meat products

There are varieties of packaging materials-

- Pork retailers should use only food grade polythene for packaging of pork instead of using ordinary polythene. Aluminum foil or thin aluminum sheet can also be used for packaging meat and meat products.

Polythene standards for packaging of meat (National Standards)

Meat and meat Products	Packaging materials
a) Meat (fresh, chilled) <ul style="list-style-type: none">• Packaging of meat including whole carcasses for local market• Packaging of meat for distant markets• Packing of whole frozen carcasses for distant market	<ul style="list-style-type: none">• Wrapped in polyethylene sheets or bags• Polyethylene sheets• Wrapped first in hosiery or linen cloth, then in kraft paper or Polyethylene film and finally in hessian cloth
b) Meat products <ul style="list-style-type: none">• Fresh sausages• Cooked meat products• Smoked ham or bacon	<ul style="list-style-type: none">• Polyethylene bags• Butter paper and then in kraft paper• Wrapped in butter paper and then put in big polyethylene cover• Wrapped in grease-proof cellophane material or butter paper

Source: icpe.in/icpefoodnpackaging/pdfs/28_national_international.pdf

Table 2: Images of various packaging materials prescribed for use under national standards

	<p>Polyethylene sheets or bags</p>
	<p>hosiery</p>
	<p>Linen cloth</p>
	<p>Kraft paper</p>
	<p>Butter paper</p>

7.3 Value addition of pork

The process of preparing high value item from a lower value produce is called value addition. For instance, preparation of sausage from intestine of pork which is a waste part of the carcass. Meat product preparation refer to all processes (such as smoking, cooking, curing, canning, freezing, dehydration and use of additives, chemicals and enzymes) involved in converting fresh pork into products. The purpose of pork processing to make products are primarily for preservation by preventing spoilage, improving the palatability and providing various products based on the taste and requirement of the consumers. A variety of non-meat materials are incorporated in the products as binders, extenders or fillers to improve cooking yields, slicing, flavor and to reduce formulation cost.

- If large quantity of pork remains unsold or if better price per kg of pork is expected, pork retailers can go for preparation of value added products from pork. These value added products may include making of pork pickle, sausage, nugget, salami, ham, bacon, etc.
- Apart from these, some other pork products are prepared in the scientific slaughter houses that are mainly available in departmental stores and grocery shops.
- Some pig producers use intestine and other leftover of the slaughter place to feed pigs after cutting into small pieces and boiling mixed with other feed ingredients (serves as meat-meal).



Various processed pork products

7.4 By-products marketing

Profit to slaughterers (or pork retailers) from pigs depends considerably on return from by products as pork forms a standard proportion of only 70% of live body weight while byproduct forms remaining 30%

Collection of animal waste/byproducts from pig

Bristles/ Hair

- Under conventional slaughtering method, many of the pig slaughterers pluck the hair instead of scalding or burning it.

- About 70-100 gms of hair is obtained from each mature pig which gives a nominal income. Pig hair has good demand in the market and some traders visit the slaughter places from time to time for buying such hairs.
- Good quality of hair is obtained during the months of September to November especially from pig reared in relatively cooler place.
- Bristles are used for manufacturing brass, carpet, cushioning materials, etc.



Bristles are left on the ground without collection

Hooves and teeth

Hooves and teeth are also sold in the market. Some traders visit the slaughter places and buy those. Hooves are mainly used for preparation of hoof meal while teeth are used as decorative item.

Blood:

Blood available at slaughter places is generally either wasted or cheaply utilized as fertilizer or in small quantities as animal feed. About 2-3 kgs of blood is obtained from a pig. For use of blood as meal for livestock feeding, the same should not get mixed with dirt, floor washing etc. For use as fertilizer all the available blood is collected in drums and transported within 6 hr. for further processing.

Offal:

Offal are those organs, viscera which are not sold along with meat but having nutritional value either for human consumption or for animal feed. Various value added by products can be prepared from offal.

Experience sharing

Instruction for the Resource Person:

The resource person will identify one or more trainee from among the group who is doing marketing of the by-products and offals.

They will explain how he/she/they is/are doing that business and making profit out of it.

Key recommended practices of the session

- For short duration preservation place pork in refrigerator (4° C) immediately, while for long duration use deep freezer (-18° C); open the door as less as possible.
- Do not overload the refrigerator.
- Maintain the desired level of temperature in the refrigerator.
- Bring the temperature of frozen pork to normal by sprinkling water in order to make it softened.
- Do not use newspaper or ordinary polythene for packaging of pork. May convert pork to some value added products to increase shelf life and to earn more profit.
- May collect, store and sell pig slaughter by-products like bristle/hair, hooves and teeth, blood, offal, etc.

SESSION 8: Rules and Regulation Governing Slaughter and Selling Practices

Session objectives The session is designed to help you in gaining knowledge on the following
<ul style="list-style-type: none">• Prevailing rules and regulations associated with meat marketing/retailing• The various punishments/penalties in the event of non-conforming the laws
Training Methods to be followed
<ul style="list-style-type: none">• Participatory discussion• Experience sharing
Training materials
<ul style="list-style-type: none">• Laptop, LCD projector and screen• Videos• Flip chart• Manual and handouts

8.1 Laws/ bylaws and regulations related to pork retailer

Meat shops and slaughter houses are regulated by the laws and by-laws of the Municipal Corporation/ Municipal Council/ Town Committee/Bazar Committee/Gram Panchayat of respective city/town/market. In this session, some general laws/bylaws governing the pork retailers have been stated which may slightly vary from place to place.

License:

- Every person who exercises any trade shall have to take a license. "License" means a formal written permission granted to person/group of persons for carrying out business in the market or in slaughter houses.
- Provisional license for ordinary trades may be issued immediately of the receipt of duly filled up application form and the payment of license fees. On submission of necessary documents and physical verification, such provisional license may be made regular. In case of delay, imposition of penalty or the closure of the shop may be done.
- Validity of trade license is only for one year. If license is not renewed in due course of time, some penalty/fine may be imposed with the license fee.

Prevention of Cruelty to Animals (Slaughter House) Rules, 2001 - The key clauses of the regulation are:

- No person shall slaughter any animal within a municipal area except in a slaughter house recognized or licensed by the concerned authority.
- No animal which is suffering from disease, pregnant animals, has an offspring less than three months old or has not been certified by a veterinary doctor as fit to be slaughtered are not allowed to be slaughtered.
- The slaughterhouse shall have a reception area of adequate size sufficient for livestock subject to veterinary inspection. The resting grounds in slaughter house shall have overhead protective shelters.

- No animal shall be administered any chemical, drug or hormone for any specific disease or ailment before slaughter.
- Materials used for construction of slaughter house shall be impervious, easily cleanable and floor shall be non-absorbent and non-slippery.
- No person below the age of 18 years shall be employed in any manner in a slaughter house.
- The Animal Welfare Board of India or any personal Welfare Organisation authorized by it may inspect any slaughter house without notice to the owner or person in-charge of it any time during working hours to ensure that the provisions of these rules are being complied with. They may also send its report to Animal Welfare Board of India as well as to the municipal corporation for appropriate action including initiation of legal proceedings if any, in the event of violation of any provisions of these rules.

8.2 Prevention of Food Adulteration Act, 1956-

- Prohibition of mixing of inferior quality meat or meat of other species with standard limits, for different microbial organisms like, E. Coli, Salmonella, Coliform organisms, Staphylococcus etc.

8.3 Food Safety and Standard Act, 2006-

- The act lays down standards for food and regulates their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption.
- No article of food shall contain insecticides or pesticides residues, veterinary drugs residues, antibiotic residues, solvent residues, pharmacological active substances and micro biological counts in excess of such tolerance limits as may be specified by regulations.
- No article of food shall contain any contaminant, naturally occurring toxic substances, toxins, hormone, or heavy metals in excess quantity

8.4 Guwahati Municipal Corporation Byelaws

Meat shops are regulated as per the directions of Municipal Corporation Act 1971 and Guwahati Municipal Corporation (Regulating the use of Markets and Slaughter Houses) Byelaws, 1976 and they are also supposed to follow the Prevention of Food Adulteration act 1954.

Under Section 180 of Guwahati Municipal Corporation Act 1971, it has been directed that every person who exercise any trade indicated in the fourth schedule shall annually take out a license before the first day of April in each year or within one month of the commencement of the trade.

Guwahati Municipal Corporation (regulating the use of markets and slaughter houses) bye laws, 1976:

License procedure:

Application for a Trade license has to be filed along with prescribed documents within one month from the date of opening the shop. The trade license needs to obtain from Guwahati Municipal Corporation.

Department involved:

The Guwahati Municipal Corporation is the authority to issue a Trade license. The commissioner of the Guwahati Municipal Corporation or the authorized officer is responsible for issuing license.

Documents required:

- a. Agreement with the landlord by the tenant in case of rented house.
- b. Tax payment receipt (Tax payment receipt up to date).
- c. No Objection Certificate for building permission.
- d. Partnership deed.
- e. House rent receipt.

License fees:

Remission of fees will be done to the Commissioner on the basis of the application submitted by the traders on valid grounds and the fees will be adjusted in Zonal office if Commissioner is satisfied.

License processing:

There is no prescribed time limit for processing such license. Undue delay may be found, if anything found unsatisfactory.

Time prescribed:

There is no such prescribed time limit for processing such license. Soon after verification of trades and relevant documents submitted, the license is issued immediately.

Renewal of license:

Validity of the trade license is only for one year (i.e., 1st April to 31st March). If license is not renewed in due time then 20% of the cost of license penalty will be realized with the license fees.

Opening and closing hours

Subject to restrictions that may be imposed by the Govt., every shop and stall keeper of a municipal market shall be bound to keep his shop/stall open from 8am to 8 pm unless for unavoidable domestic cause in individual cases.

Other directions

- No person shall store or sell animal, fish, vegetables or any article on approaches, foot paths within the municipal market and shall in no way obstruct, put hurdles on free movement of people visiting the market.
- No person shall hawk any article in such market without permission from the commissioner.
- No person shall use any weights, scales or measures other than such standard weights, scales and measures prescribed from time to time by the government.
- No trader or person shall throw or deposit any article on the road or path or in drain or in any way obstruct free flow of drain and/ or surrounding the municipal market.
- No person shall obstruct or hinder or put hurdles to any staff engaged in clearance of drain, interior path and open spaces in between the rooms, stall or shed in a municipal market.

- No persons shall carry any meat in a market unless it is properly covered.

Conditions for license:

- The flooring and the drainage shall be kept at all times in good order and repair and there shall be provision for suitable means of ventilation and lighting along with sufficient supply of wholesome water.
- The sale of animal, fish and vegetable in the same stall shall be prohibited.
- The licensee shall ensure the absence of rats and other rodents in the premises. No person suffering from leprosy, open sore or any loathsome, infectious or contagious disease shall be allowed to enter the market.

Penalty

Penalty may be charged or shop may be closed as directed by the Commissioner, Guwahati Municipal Corporation for violations. A monetary fine as fixed and revisions of the same made from time to time can be charged. Any sale within the municipal market animal, fish, vegetables or any article so exposed for sale by person may be summarily removed from the market by or under the orders of the Commissioner or any employee of the Corporation authorized by the Commissioner on this behalf, if it is violating the regulations by the bylaws.

Experience sharing: The compliance of the rules and regulations

Instruction for the resource persons: Identify two participants of whom one has been doing the business by following all the rules and regulations prescribed by the municipalities for running the business. The other is doing the business by breaching the requirements prescribed by the municipalities and faced some problems in performing the business. Ask both these pork retailers to share their experiences. Later, explain to all the participants the importance of following the rules and regulations under the act of law and how to remain beneficial and enhance dignity throughout the life in the pork retailing business.

SESSION 9: Record Keeping, Networking and Business Development

Session objectives The session is designed to help you in gaining knowledge on the followings
<ul style="list-style-type: none">• The advantages of maintaining various business records of the pork retailers• The importance of maintaining personal behaviour with customers and input suppliers, business and conflict management, networking etc. for overall growth of the business.
Training Methods to be followed
<ul style="list-style-type: none">• Participatory discussion• Distributing various record keeping formats• Experience sharing• Role play
Training Materials
<ul style="list-style-type: none">• Laptop, LCD projector and screen• Whiteboard and markers (multiple colours)• Manuals and handouts

9.1 Simple business records

9.1.1 Why record keeping is important?

- Record keeping helps pork retailers to work out sales, expenses profits and to take note of other business information that helps in business planning.
- Well-kept records help in reducing conflict and increasing trust and transparency.

9.1.2 The records that the pork retailer should keep

- One important record to be maintained is the daily pig/pork purchase and revenue receipt record. An accurate daily/weekly record of the total volume of pigs (quintals or Kg/ week at live weight) or volume of pork purchased from different places is necessary for taking account of the daily/weekly expenditures made in buying pigs (at live weight) or pork and total pork sold (in kg).
- Salary and other expenses record: A pork retailer spends money on salaries of the workers/sales person, house rent and market revenue, LPG, electricity, etc. He/she should keep appropriate record of all those that helps him/her to avoid any potential conflict that may arises because of forgetting something by either party.
- Keep records safe and make sure that you can access them easily whenever you need them.
- Make monthly summaries of your records in the way that it enables you to take certain crucial decision for the subsequent month.

Record on daily pig/pork purchase and revenue generated:

If pork retailer sells pork after slaughtering pigs by himself/herself

Date	No. of pigs purchased	Price paid for the pigs bought	Location/villages from where pigs are purchased	Pork sold after dressing (kg)	Average pork price received /kg	Total revenue from the sale of pork
05/05/2020	2	15000+ 14000= 29000/-	e.g. Kadong, Bhaluki	185	200	37,000/
06/05/2020						

If pork retailers sell pork after buying it in large pieces from slaughterers

Date	Pork purchased (Kg)	Name of sellers	Price paid to slaughterers/kg (Rs)	Total cost for the pork purchased	Pork sold (kg)	Price received per kg of pork	Wastage of pork if any (kg)	Total revenue from the sale of pork (Rs)
05/05/2020	40 kg	e.g. Mr. Rinku Boro	195.00	7800	38 kg	240	2 kg	9120.00

Salary and other expenses record:

Date	Labour cost					Transportation cost	House rent (Month/30)	Electricity (Month/30)	LPG	Water	Market revenue (khajana)	Total Expenses
	Casual worker for slaughter (no.)	Per day payments/ cost per pig (Rs)	Labour for sale (if any) (no.)	Per day payment (Rs)	Total labour cost (Rs)							
	2	500/-	1	300/-	1300/-	400/-	2000/30=67/-	450/30= 15/-	150/-	50/-	10/-	1992/-

*Total fixed costs are to be calculated in day's term. For example if INR 20,000.00 is incurred in the name of salary of permanent workers, then daily cost would be $20000.00/30=666.67$

9.2 Business development plan

Good personal behavior, personnel integrity and better communication skill help a pork retailer in creating more confidence amongst his/her consumers and improve business relations with both pig suppliers, consumers and other clients.

9.2.1 Dealing with customers

Important things the pork retailer should know:

- The first impression is the best impression. It is important to make an impression that attracts the target customers immediately.
- A pork retailer should always greet the customers with a smile retailer in creating.
- It is always the customer who ultimately helps in sustaining the business. A pork retailer should always address a customer as “sir/madam”. He/she should always make customers feel special and important and this will make them loyal.
- A pork retailer should present customers the quality piece of pork if he/she has any. Explain that such type of pork is the result of the standard hygienic and quality assurance practices learned to prepare through training given to pork retailers.
- A pork retailer should not ignore or be rude to even a single customer as good or bad behaviour of sellers may pass to another 10 customers. Thus, value each and every customer equally and behave cordially.
- This may be the case that currently you are the only pork retailer in the locality and may feel whichever way you behave with customers, they are bound to buy from you. But a time may come that new pork retailers may soon start his/her business and threaten your business. Hence, behave your customers to build a sustainable reputation of yours among the buyers to make yourself confident that nobody will be able to beat you.
- It is important to influence the customer with quality assurance, convince them and sell.
- Develop the art of how to manage customers belonging to different sections (caste, creed, ethnicity, etc.) in the locality. Read customers accurately. Be soft but steady and handle difficult people smoothly.
- A pork retailer should think for long term. He/she should not sell pork if he/she has doubt or not convinced on the quality or discard the product if he/she sees any abnormal smell/odour. By selling poor quality pork a pork retailer can avoid short term loss but in the long run his/her business will suffer. Some permanent customers may stop procuring pork from him/her.
- Communicate with confidence keeping in mind the value addition of the service. Confidence comes out of quality product and best possible services to people while making profit in business simultaneously.
- If any complaint from customers on quality is valid, a pork retailer should try to accept it without debating further and should apologize for the mistakes done and try to compensate if possible. He/she should assure him to provide the right quality pork in his next purchase. This will help in building a sustainable trust of the customers on the pork retailer.

- If there are any changes in the usual services, he/she should let customers know in advance.
- Be prompt in serving the customers. Always serve the customers on first come first service basis irrespective of showing any favouritism to anyone.

Additional Tips:

- Should keep pace with the latest available techniques or equipments to prepare quality products at minimum cost and handle them.
- Rather than increasing profit margin by selling to few customers at a higher price, you should adopt the technique of slightly lowering the price and increase the number of customers to arrive at higher profit in total.

9.2.2 Dealing with sellers/suppliers of live pig

- Build a good and long term relations with the sellers/suppliers of live pigs conforming good qualities in him/her and his/her product.
- You need to understand how crucial your searches for live pigs are for the sellers/supplier.
- Be careful of driving a hard bargain with your sellers/suppliers. It can make the sellers/supplier offended. Suppliers are also same as customers that help your business sustain for long term.
- Some sellers of live pigs at villages may be ignorant about the current prices of pigs. Never try to deceive such sellers by quoting and picking pigs at a reasonably lower price than the market rate. Other villagers will surely come to know about it and you will have a bad reputation among the neighbors of that seller.
- State your needs clearly to the suppliers (if there is prior order for bulk quantity of pork to you) and pre-fix price, quantity, quality, date of delivery, mode of payment etc to avoid any post supply disagreement on any of these issues.
- Be open, courteous and firm with your suppliers, and they will respond in kind. Tell them what you need and when you need it.
- Have a specific understanding about the cost per unit, and expect delivery on schedule. Keep in touch with your suppliers/sellers to avoid possible delays, stock, quality etc.

9.2.3 Personal integrity

For practicing better personal integrity by a pork retailer

- Keep interaction with everyone related to your business (input suppliers, customers, co-workers, landlords, etc.) respectfully.
- Show willingness to understand others' problems or issues that connects with your business.
- Maintain emotional control even when feeling tempered.
- Communicate honestly and openly.
- Express your concerns constructively.
- Try to be objective as far as possible.

- Improve your personality, appearance and body language.
- Look for solutions that meet mutual needs of everyone in the event of any dispute or disagreement.
- Keep your word or promise.

9.2.4 Conflict management in pork retailing business

- **Do not try winning or being right:** The only victory when it comes to dealing with conflict at work (with customers or input suppliers) is a mutual one, that results in de-escalation, new common ground, and resolved conflict.
- **Do not blame anyone but look for a root cause:** Conflict may arise out of ignorance, misunderstanding etc. So try to remember this always and rather than blaming someone try to resolve the root cause of the problem.
- **Assess your own emotions before meeting:** We're humans; imperfect, and often irrational. Taking a step back to figure out how we're really feeling is one of the best things one can do early on when handling conflict with any of the pork business associates, customers or pig suppliers.
- **Keep conversation goal-oriented:** Keeping things goal oriented to resolve problems at workplace is what more important than making it emotionally focused.
- **Meet face to face:** Meeting persons is incredibly important to show directly your own emotions to make them feel that you are part of the problems and for the greater interest of the business and of both parties, you stand with them.
- **Find opportunity to admit you were wrong:** Instead of arguing and thereby offending the other party, try to find opportunity that things could have been better or admit that you were wrong.
- **Conversation:** Create space for conversation and have open channels to address conflict.

Additional Tips:

Benchmarking

Benchmarking is comparing your business with others to understand your current position and learn from it.

You can visit other businesses with proven track record and observe:

- Their premises,
- Their products and prices,
- Customer services,
- Negotiation quality with input suppliers

This may give you ideas on how to improve your business.

9.3 Networking with other agents (for inputs and output)

- Try to have some key informants in each village and maintain good relations with them so that you get quality pigs regularly at desired numbers, at competitive price and on time.

- Try to maintain long term relationship with input suppliers with loyalty.
- Always make timely payments to suppliers of pigs and other supplier agents of inputs, behave with them cordially and stand by them at the hours of their crisis
- Try to have trustworthy and cordial relationship with the banks and insurance service providers for easy access of credit and insurance services.
- Look for persons who buy bi-products such as bristles, hooves and teeths etc. and establish a durable relations for continuous sale of such bi-products.

Practical exercise:

Experience sharing: Service providers and Bi-product marketing

Instruction for resource persons: Ask the training facilitator to have a discussion with few training participants or outsiders having good links with institutions providing credit and insurance services. Allow them to speak on the advantages of having such links to get access to the services at times of need. Also if there is any who sells bi-products of pigs to buyers of it, allow him to share his experiences in terms of increased revenues, easy disposal etc.

Role play: Dealing with difficult customers

Instruction for the resource person-

Select two participants of the training session and ask one of them to act as an offensive customer and the other as a pork retailer and let them play a role where both of them will converse and end up having an unfair business practice. This may include rude behavior of the sellers, selling poor quality products and refusing to accept customers' complaints, unacceptable body language.

Key recommended practices of the session

- Try to maintain correct and up to date records such as the weekly pig purchase records, daily net returns of the business etc.
- Always value each and every customer and greet with a smile and show that you are happy to see him/her.
- Try to build a cordial and long term relations with the suppliers/sellers of pigs/pork. Never involve in a hard bargain with any of the suppliers as it may make them offended with you.
- Always try to maintain emotional control even when feeling tempered. Look for solutions that meet mutual needs of either parties (pig/pork suppliers-pork retailers-customers).
- Have key informants in the villages from where pigs are sourced and maintain good network with them as well as with other service providers.

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Performance Indicator: Trained Pork Retailers

Sl. No.	Indicators	Performance (put tick mark)		Score within 0-5*
		Yes	No	
1.	Pork is displayed in clean and non absorbent surface (e.g., aluminium/stainless steel sheet,			
2	Pig is slaughtered in a clean and hygienic environment			
3	Clean and potable water is used in slaughtering and retailing operation			
4	The vehicle where pork is transported is clean, and do not put carcass/pork on an unmated surface.			
5	Cleaning operations such as dressing of carcass is done separately from unclean operations like cleaning of stomach, guts and intestines.			
6	Pigs gets sufficient rest before slaughter			
7	Pork retailer wear clean cloth, have trimmed hair (or use hair restraint cap), moustache and beard, and have clean and short finger nails.			
8	During retailing do not smoke, sew paan or tobacco, and cough or sneeze over pork.			
9	Blood is not rubbed over carcass for the sake of attractive appearance.			
10	Utensils are properly cleaned and disinfected			
11	Offal are disposed properly (without reach of dogs, cats, other wild animals)			
12	Packaging is done in food grade polythene/aluminium foil			
13	Possess valid municipality trade license			
14	Maintains up-to-date record of pork purchase, receipt of revenue and other expenses.			
15	Business volume has increased by			
16	Approach and behavior towards consumer has improved			

* Score is 0-5; where 0 for complete non-adoption, 5 for complete adoption

Performance evaluated by

Signature:

Name and designation:



International Livestock Research Institute (ILRI)