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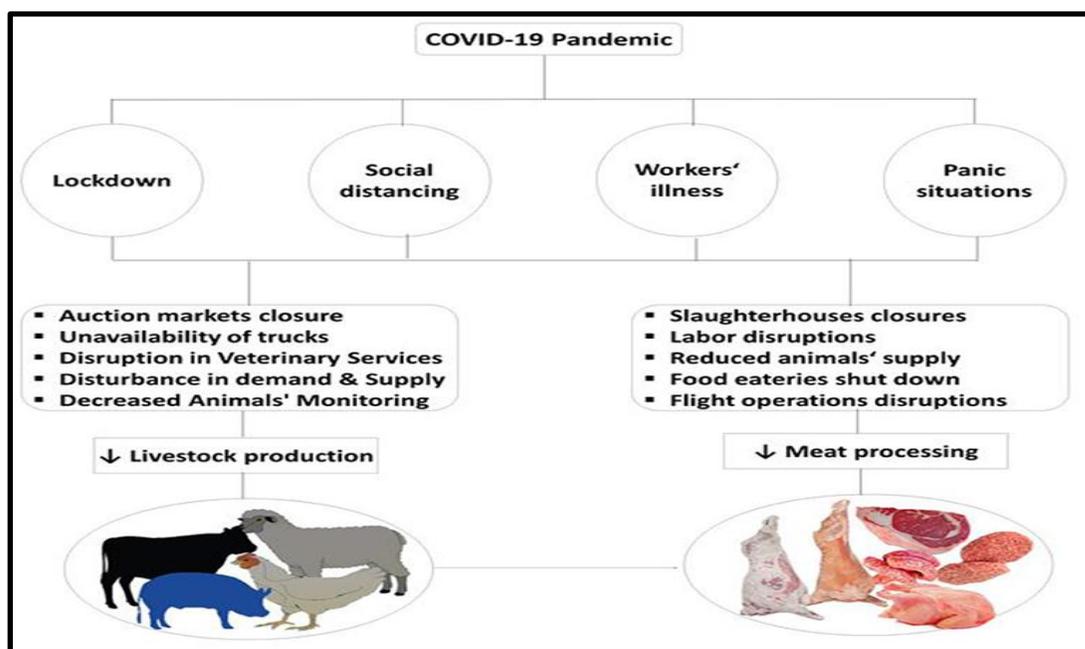
Management practices for production of qualitative food animal including poultry in Covid 19 Pandemic situation

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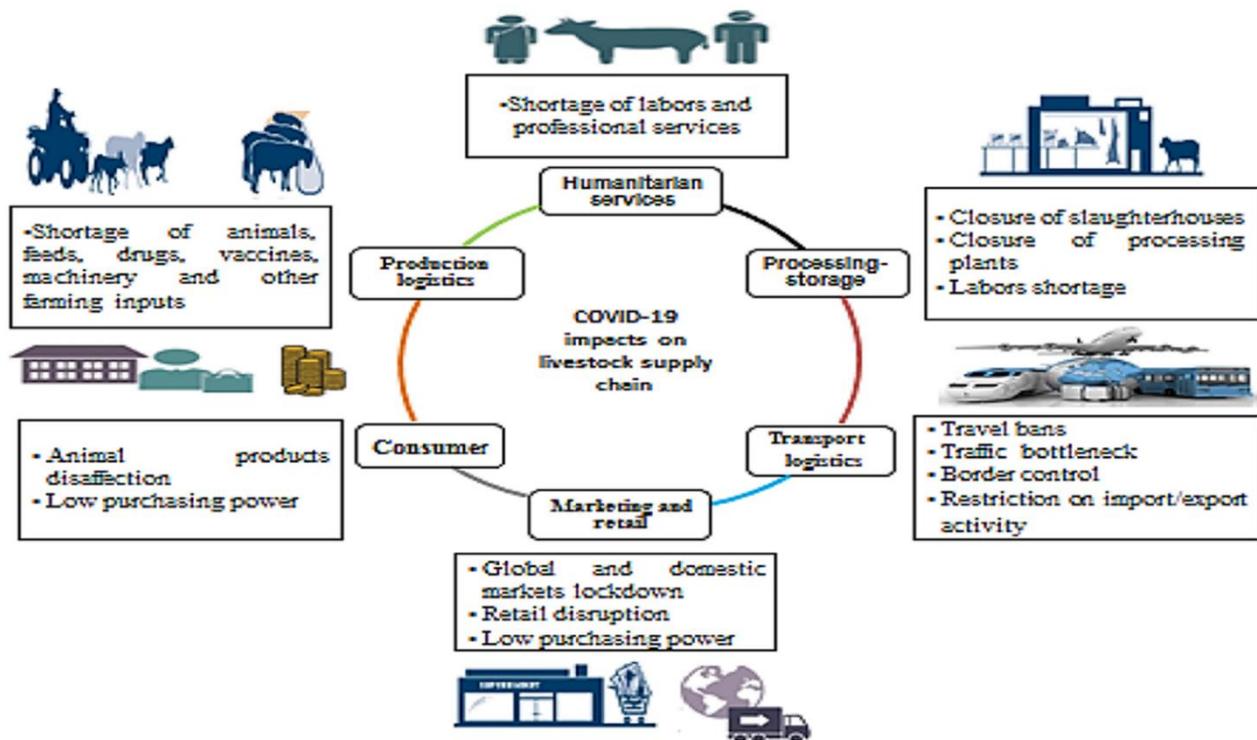
Introduction

Food Animal: Food animal means any mammalian, poultry, fowl, fish, or other animal that is raised primarily for human food consumption



Recommendations management practices for the livestock farm, animal health to produce qualitative food animals under covid -19 situation:

To reduce the impact of COVID-19 and ensure continuity of the livestock supply chain and animal health activities, practical recommendations and precautionary measures are given below. These are for livestock farmers, actors along value chains, animal health professionals and policy makers – aiming to protect people and animals, and to minimize the disruption of services.



Recommendations for livestock farmers:

- 1) Communicate with suppliers (e.g., feed, consumables) and professional service providers (e.g. veterinarians, mechanics, milk collectors) to find solutions to secure supplies, inputs and services.
- 2) Communicate through producer cooperatives or farmers associations – to reach out to decision makers regarding assistance, as well as obtaining necessary exemptions for mobilization of animals, products and personnel.
- 3) Explore alternative sales channels. These include online sales, e-commerce and direct sales using point-to-point transportation to deliver livestock and their products to buyers instead of via retailers or markets.
- 4) Obtain the latest information on the evolving COVID-19 situation from trusted sources e.g., official news releases, radio programmes provided by local governments, field livestock/veterinary officers, livestock market officers, livestock NGOs, veterinary pharmacies and farmers associations.
- 5) Implement practical biosafety and biosecurity measures to prevent human contamination with COVID-19 on the farm:
 - a. Install footbaths in between different areas if possible, and change the disinfectant frequently.
 - b. Maintain a designated area for all external visitors and restrict visitor interactions with farm

workers and operations to essential activities only.

c. Limit visitors to minimum essential (e.g., animal health workers, feed truck drivers, milk collectors) and keep records. Ensure that visitors follow physical distancing and other hygiene recommendations.

d. Anyone (including farmers and farm workers) with fever and other symptoms of COVID-19 (whether confirmed or suspected), people who have tested positive for SARS-CoV-2 (including asymptomatic or recovering persons), and people in an isolation period due to close contact history with COVID-19 patients, should avoid or minimize close contact/work with animals, until recovered and cleared by medical providers.

e. Routinely clean and disinfect common areas e.g., resting areas, kitchens, changing rooms, bathrooms, sleeping quarters.

f. Control interactions/socialization of people inside the farm, e.g., around the TV or resting areas, to ensure physical distancing and other recommendations are followed.

g. Disinfect equipment and other materials as they come onto the farm and at periodic intervals. Limit the introduction of personal items to the farm.

h. Change clothes and footwear between livestock areas and living areas, or at least put on work wear (e.g., coveralls) and change footwear to reduce cross contamination.

i. Maintain general hygiene of the premises where the animals are kept (e.g., prevent rodents and vermin) to avoid contamination.

j. Consult with animal health professionals to improve biosecurity and biosafety on the farm.

6) Adjust management measures on the farm:

a. Raise awareness among farm workers about how COVID-19 spreads and how to prevent getting infected, and routinely remind them about biosafety and biosecurity measures against COVID-19 on the farm.

7) Maintain animal disease prevention at farm level:

a. Maintain good animal husbandry and production practices as much as possible (e.g. milking hygiene).

b. Make best efforts to ensure continuation of sanitary programmes for the farm animals as planned, including vaccination, vector control and deworming.

c. Implement good biosecurity practices, including routinely cleaning and disinfecting barns, pens, rooms, and other facilities to reduce the pathogen loads.

d. Seek advice from veterinarians and livestock husbandry specialists when needed.

Recommendations for animal health professionals (veterinarians, veterinary

technicians and veterinary paraprofessionals)

- 1) Secure supplies, inputs and services:
 - a. Contact suppliers (of veterinary drugs and consumables) and professional services (diagnostic laboratories) regarding availability and possible delay in delivery.
 - b. Where lockdown or curfew is in place, apply for the exemption for essential businesses (many countries include animal health activities in the essential business category).
 - c. Manage the essential consumables you have in stock, including syringes, tubes, disinfectants and PPE. Be familiar with the correct disinfection procedure of reusable veterinary equipment such as needles, syringes and surgical instruments to help with limited supply.
 - d. Consider reviewing and refreshing existing management, preventive and diagnostic techniques, in order to substitute current practices that cannot be maintained due to the lack of supplies and/or reagents (Centers for Disease Control and Prevention. 2020; OIE, 2020).
- 2) Keep up to date with reliable information and sensitize farmers on required behavior changes.
 - a. Help farmers to review and adjust production management with the supplies, equipment and personnel available to them.
 - b. Help farmers to review and adjust biosecurity practices, such as cleaning and disinfection, based on the need and the availability of resources.
 - c. Help farmers to identify the most relevant priorities and functions regarding prevention of diseases, that can be performed with minimum personnel.
- 3) Implement personal biosafety and biosecurity measures (along with general hygiene practices for COVID-19 recommended by WHO):
 - a. Do not visit farms, herds, markets or animal product processing facilities if you have any symptoms of COVID-19, or if you are confirmed positive and have not yet recovered/been cleared by medical providers following the isolation period.
 - b. Carry soap, alcohol-based hand sanitizer, disinfectant and PPE when visiting farms and other livestock related facilities without relying on availability at the farm.
 - c. Make sure you and the farms are using disinfectants that are known to be effective against SARS-CoV-2.
 - d. Maintain physical distancing with farmers and workers when you interact with them and follow other hygiene recommendations.
- 4) Assist animal disease prevention and control at field level:
 - a. Maintain open communication with livestock farmers and live animal markets (if the markets are

open).

b. Request farmers and markets to continue reporting disease outbreaks and animal deaths of unknown reason to veterinary offices even when lockdown or curfew is in place.

c. Advise farmers on good livestock husbandry practices to mitigate the risk of disease outbreaks on farms.

d. Assist in contingency planning for livestock production, livestock markets and processing facilities.

5) Have a contingency plan:

a. Maintain an inventory of medicines, drugs, disinfectants, PPE, diagnostic tests, supplies and equipment.

b. Ensure information and communication technology (ICT) is in place for giving animal health advice: e.g., telephone and messaging services.

c. Familiarise yourself with the latest laws and regulations regarding online veterinary consultation or telemedicine during the COVID-19 pandemic.

Recommendations for animal product processing plants, live animal markets and related supply chains

1) Secure supplies, inputs and services

2) Keep updated with reliable information.

3) Implement biosafety and biosecurity measures against COVID-19 to protect people working at the facility, including increasing air ventilation.

4) Following the measures for food processing facility workers, food delivery and transport, and food retail premises as detailed in the FAO and WHO Interim Guidance, COVID-19 and food safety: guidance for food businesses (FAO/WHO, 7 April 2020).

5) Follow biosafety and biosecurity measures to prevent contamination of the environment by COVID-19:

a. Disinfect reusable PPE items after every use using appropriate disinfectant

b. Maintain general cleanliness of the premises and periodically disinfect the facilities.

c. Limit visitors to the processing environment.

D. Keep records of movement of people including workers, visitors and suppliers.

6) Adjust management measures to decrease the risk of introduction and spread of COVID-19 in the facilities:

a. Stagger workers entering or leaving the premises.

b. Stagger mealtimes and break times to avoid large gatherings in break rooms and dining rooms.

- c. Consider screening individual temperatures and typical COVID-19 symptoms before entering the facilities. When possible, provide access to medical personnel (e.g. nurse) for the workers.
 - d. Provide guidance to clean and disinfect the work environment before and after shifts, including shared spaces, employee break rooms, dining rooms, sleeping quarters, bathrooms and company transportation services.
 - e. Prepare for shortages in the workforce. Develop an alternative plan to manage the facility with fewer workers – adjusting work arrangements in case some of the workers become infected or are isolating due to COVID-19. Implement cross-training as much as possible.
 - f., if possible, review and adjust the sick leave policy of employees and encourage self-reporting of illness.
- 7) Recommended actions for animal disease prevention at live animal markets and by traders:
- a. Keep market area clean and regularly disinfected
 - b. Try not to let animals stay overnight in live markets in the case that lockdown or curfew is imposed.
- 8) Have a contingency plan:
- a. Identify alternative suppliers or inputs in case the main supply-chain is disrupted.
 - b. If possible, seek exemption of movement restrictions to contribute to ensuring stable basic food supply for national food security and nutrition.
 - c. Review and adjust waste and litter management plans.
 - d. Strengthen control of movement of people including workers, visitors and suppliers.

Recommendations for policy makers at national level

- 1) Develop, endorse and implement policies to mitigate impact of COVID-19 on livestock production and value chains:
 - a. Ensure availability and flow of the normal inputs and outputs for livestock production, for example by releasing a list of exemptions to movement restrictions.
 - b., if possible, review and adapt existing biosafety and biosecurity measures to the COVID-19 situation and provide these as a checklist for farms, livestock product processing facilities, live animal markets, slaughterhouses and related value chains.
 - c. Include veterinary services as essential businesses.
 - d. Ensure a functioning supply chain of livestock and animal products:
 - Governments may release and broadly publicize a list of exemptions to movement restrictions to ensure the flow of food materials and production related services.
- 2) Review, revise, endorse, and implement policies on animal disease prevention and control.

3) Develop and disseminate information materials and collaborate with partners to organize outreach activities, in order to sensitize livestock production and animal health stakeholders, including relevant recommendations in this document.

Food Safety

Food safety means assurance that food will not cause any harm to the consumers. An understanding of food safety is improved by defining two other concepts - toxicity and hazard. Toxicity is the capacity of a substance to produce harm or injury of any kind under any conditions. Hazard is the relative probability that harm or injury will result when substance is not used in a prescribed manner and quantity.

Hazards can be physical, chemical and biological causing harmful / adverse effects on the health of consumers.

- Food safety is used as a scientific discipline describing handling ,preparation, and storage_of_food_in ways that prevent food-borne_illness.

Five Keys to Safe Food are:

- (1) keep clean;
 - (2) separate raw and cooked;
 - (3) cook thoroughly;
 - (4) keep food at safe temperatures;
- and (5) use safe water and raw materials.

Quality evaluation of meat and meat products based on:

- Physical tests
- Chemical...protein, fat, carbohydrate and interaction products
- Microbiological... organisms and toxins
- Sensory
- Authenticity
- Contaminants antibiotic, pesticides, heavy metals
- Traceability
- Label declarations

Food Standards

Effective food standards and control systems are required to integrate quality into every aspect of food production and service, to ensure the supply of hygienic, wholesome food as well as to facilitate trade within and between nations. There are four levels of standards which are well

coordinated.

- Company Standards: These are prepared by a Company for its own use. Normally, they are copies of National Standards.
 - National Standards: These are issued by the national standards body.
 - Regional Standards: Regional groups with similar geographical, climate, etc. have legislation standardization bodies.
 - International Standards: The International Organization for Standardization (ISO) and Codex Alimentarius Commission (CAC) publish international standards.
- Food Safety and Standards Act (FSSA), 2006
 - Food Safety Management System (FSMS): ISO 22000, also known as food safety Management system and is an international auditable standard.

The food consumption pattern in India is gradually getting diversified to high value commodities. The livestock products, especially meat and meat products are of paramount importance in this diversified menu. Meat is the most valuable livestock product which requires proper attention right from animal slaughtering to its human consumption. Meat is a highly demanded food item due to presence of plentiful proteins, minerals and all the B complex vitamins with excellent digestibility and well-balanced composition of essential amino acids. Because of being nutritionally rich and highly perishable in nature, meat and poultry products are at high risk of contamination and spoilage. The unorganized meat sector functioning under minimal facilities is usually more prone to safety and hygiene concerns which may include the following:

- Microbiological contamination
- Chemical contamination
- Physical contamination
- Cross contamination
- Adulteration/substitution of meat for financial gains
- Unauthorized practices for fetching better prices for meat

Tips for consumers:

Consumers as smart buyers should keep in mind following basic points while purchasing meat and meat products:

- Freshness of meat, visual appearance (color, texture, fat content) and odor;

- When purchasing meat and poultry, it's important to use your senses of touch, smell and sight.
- Always make sure the meat is firm to the touch, have no discolorations, stickiness/sliminess and off-odors;
- Also keep in mind the hygienic condition of the meat outlet and personal hygiene of the retailer;
- Buy meat from licensed/registered shops that have refrigerators;
- Never buy the meat that is wrapped in newspaper or any ordinary paper;
- Look out for very dark bits on the edges of the meat which indicate poor storage and refrigeration.
- Colored plastic bags should be avoided for carrying meat.
- If carrying meat in such plastic bags always make sure that there should be no visible colour migration.
- For packaged meat or poultry products, always closely examine the labeling with respect to its ingredients, use by date or expiry date whichever has been mentioned;
- Check that packaging doesn't have any tears, holes or excessive amounts of liquid.
- Never choose meat or poultry in packaging that is torn or leaking.

Reference:

Food and Agricultural Organisation of the united Nation (FAO), Guidelines to mitigate the impact of the COVID-19 pandemic on livestock production and animal health

<https://ncert.nic.in/textbook/pdf/lehe106.pdf>

Food Safety and Standard Authority of India (FSSAI),
https://fssai.gov.in/upload/uploadfiles/files/Guidance_Note_Meat_Poultry

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