

Disease Management in Farm Animals

Mritunjay Kumar, Manish Kumar¹, Ranveer Kumar Sinha, Arvind Kumar Das and Ravishanker Kumar Mondal

Department of Veterinary Medicine, Bihar Veterinary College, BASU, Patna

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Introduction

Farm animals have significant economic contribution to the human community. The diseases in farm animals causes mortality, morbidity and loss of production which affects directly and indirectly the human communities associated with them (Roberson Ian D., 2020). In the framework of livestock production systems, diseases are contributing a significant set of problems to animal welfare, productivity losses, uncertainty in food safety, reduced income, and unfavourable impacts on human health. The disease management can be directed at agent of disease, host inhabitants and habitat are to be focused on humane activities population (Wobeser, 2002). Livestock disease management in farm animals can minimize the disease occurrence through improved animal husbandry practices. This includes, controlled rearing, control of access animals in farm lots and by quarantining of suspected and infected animals in conjunction with developing and improving antibiotics, vaccines, and diagnostic tools as well as an evaluation of ethno-therapeutics options and vector control techniques. Livestock disease management is mainly consisting of two components a) Preventive measures in vulnerable herds or flock and b) Surveillance and control measures in infected herds or flock.

Prevention measures

The most efficient and cost-effective way to manage disease is by preventing diseases from entering and spreading within the livestock population (Wobeser, 2002). Improved regulation of the movement of animals may offer greater protection, although many approaches for management are based on disease specificity. There is no standard program to prevent diseases that can be used in

all contexts. Even though, there are some basic principles that need to be constantly followed in the field for prevention of disease.

- Biosecurity in livestock farm or flock consisting of set of managerial practices that prevent the spread of infectious agent on a farm or outside the farm (Roberson Ian D., 2020).
- Disease monitoring in new animals before being introduced into the main flock.
- Good records maintenance relative to flock or herd health in context to vaccination, disease problems and treatment.
- Vaccination schedule must be followed for each herd or flock.
- Frequent one-to-one care of animals in herd or flock for detection of disease, adoption of an early reliable diagnosis and adoption of the best treatment protocol, control and eradication procedures for that specific ailment.
- Maintain good hygiene measures at farm or flock including clean milk production, water and feed supplies.
- The new animal should be purchase from reliable source that can supply healthy and inherently vigorous breed which is developed for a specific purpose.
- Proper disposal of dead animals in herd or flock. The various methods like incineration, deep burying, or disposal pit are commonly used. Buring is the best method of disposal of dead animals.

Surveillance and Control measures

Surveillance of infectious diseases allows for the identification of new or emerging infections and their evolution. This includes the reporting and submission of samples from infected animals by livestock owners, veterinarians at village level as well as local and regional veterinary officers. The method used for the fight against disease outbreaks will be determined based on the severity of disease outbreak. The location of all livestock must be precisely determined when there is a disease occurrence, to ensure efficient control and eradication of the etiological agent. Restrictions on animal movements may be essential as well as quarantine besides slaughter in extreme cases.

The climate change has major impacts on vector borne diseases of livestock. Outbreaks of vectors in colder areas were supported by increasing temperature. These cooler regions may be either higher altitudes system, so the livestock tick-borne diseases are more in temperate areas. Changes in the rainfall pattern, which are also likely to be accompanied by an increase of vectors during periods of wet weather, can cause significant outbreaks. In addition, changes in the distribution of livestock may indirectly affect disease transmission due to climate change. This is why an effective tool for adapting to climate change is improved control of livestock diseases.

- 1. Restricting the movement of personnels:** Many diseases are transmitted to animals/birds through human movement. Consequently, control of movements by persons on and off farms may prevent the occurrence of many diseases, especially in livestock and poultry.
- 2. Control of rodents and pests:** Sometimes rodents and pests can help to spread diseases among livestock and poultry. In order to control the entry of rodents and pests into farm premises, appropriate measures should therefore be taken. Maintaining the animals free of ticks by regular cleaning, grooming and spraying (tick control medicine) can prevent tick-borne diseases in animals.
- 3. Treatment:** Drugs that can be used to control the disease and given at times of high risk for preventing or enhancing productivity are also available.
- 4. Quarantine:** It is the isolation of animals that are either infected or suspected of being so, or of non-infected animals that are at risk. The duration of quarantine shall depend upon the incubation period for the agent, the time required to confirm that a disease has been introduced into an animal and the time it takes before infection becomes infectious. When animals come from other countries where exotic diseases are endemic, it is used to isolate them.
- 5. Controlled Grazing:** The level of infestation with some parasites can be reduced by controlled grazing techniques.
- 6. Control of biological vectors:** Some of the diseases are transmitted by some biological vectors like ticks, snails, mosquitoes. Hence, control of these vectors helps to prevent diseases.

7. **Culling or Slaughter:** The productivity of animals is usually decreased when they are chronically diseased. If it is an infectious disease like tuberculosis, brucellosis, the infected animals may be a source of infection for others. In such a case, the removal of the animal from the flock or the slaughter of the affected animals may be economically feasible.
8. **Proper management of the farm:** It is possible to prevent or control certain diseases that affect livestock by proper feeding and managing them. Good hygiene and sanitary conditions on farms can therefore prevent the occurrence of mastitis in cows. Before cows are milked, they need to wash their udders. Every time a milking is performed, the milker should wash their hands. The animals may not sit for 30 minutes after milking; it is possible to feed them while they are being milked.
9. **Geographic Information System (GIS):** GIS is very important in livestock disease management. The main advantage of GIS software is user can see the geographical distribution of a disease and animal disease can be viewed against other information (FAO, 1999).
10. **Avoid overcrowding:** It is a significant cause for the spread of infections. Thus, there is a need to avoid overcrowding and adequate space should be provided for movement of the animals.
11. **Disposal of dead animals:** It is necessary to bury dead animals. Similarly, in order to avoid the transmission of disease-causing agents between healthy animals and birds, it is important that objects, food, water, nasal or other discharges should be properly disposed.

Common disinfectants and antiseptics used in farm disease management

Sl. No.	Name	Concentration	Uses
1.	Potassium permanganate	1:1000	Antiseptic
2.	Chlorinated lime (bleaching powder)	3-12ppm available chlorine	Used in drains, buildings, floorings of sheds.

3.	Iodophors	1 %	Udder washing, teat dipping, cleaning milking machine equipments and vehicles.
4.	Formaldehyde	1-2 %	Disinfection of flooring of sheds and contaminated surfaces. For fumigation along with potassium permanganate.
5.	Sodium hydroxide (lye)	2-4%	Disinfection of buildings, floors. Penetrate organic matter.
6.	Sodium carbonate	4%	Disinfection of floors of sheds, utensils etc., especially in viral diseases like FMD.
7.	Calcium oxide (quick lime)		Used while burying carcasses disinfection of sheds and surroundings.
8.	Phenol. Cresol Lysol (cresol with soap)	2% 5% 3-5 %	Used in buildings, floors and sheds, effective in the presence of organic matter.
9.	Chlorhexidine	0.5%	Disinfection of hospital equipments
10.	Quaternary ammonium compounds	0.1-0.5%	Effective against bacteria, disinfection or dairy equipment, udder, teats and for disinfection of eggs.
11.	Ammonia	10%	Kills oocysts of coccidian.
12.	Cetrimide	0.5%	Disinfection of sheds, wards
13.	Benzalkonium chloride	1:2000	Water purifier
14.	Flame gun	-	Burns all pathogens, used for disinfection of cages in mange infestation

Conclusion

In conclusion, livestock disease in farm animals can be minimize or control through advanced animal husbandry practices of biosecurity and disease surveillance measures. The adoption of management practices in farm animals depends on the type of infections or outbreaks prevalent in that specific area. The frequent monitoring of animals for clinical signs of disease and some routine test at regular interval is the best way for early diagnosis and treatment of disease in farm animals.

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