Principles of safe disposal of animal wastes

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Utilization of animals and animal by-products has tremendous impact on the national economy. Equally significant from the public health point is the proper handling of the by-products and wastes. Animal wastes are potential public and animal health hazards, and this primarily depends on the degree of existence of dangerous zoonotic diseases in the country.

Animal wastes can be classified as low and high-risk wastes.

Handling low risk materials

The materials should be handled in a way that poses minimum risk to human beings, animals and environment. Even though the risk from these materials is marginal, care should be taken to handle them hygienically. Minimize contact of man and animals with such materials. Different steps involved in processing these materials are

1. Keeping the materials until collection
2. Collection
3. Transport
4. Decontaminating process
5. Handling decontaminated materials.

Keeping the materials until collection

The following basic principles should be taken care of

1. Keep isolated from the surroundings
2. Keep in a cool, dry place away from rodents, birds and other animals
3. Present spread of contaminants by wind, rain etc.
4. Segregate storage place from animal premises, human dwellings, food industries etc.
5. Cadavers of small animals (including birds) should be stored in a dry and cool place.
6. Wear gloves while handling dead animals.
7. Before treatment animal cadavers should be examined by a Veterinary Doctor to exclude high-risk infections.
8. Inedible offal from slaughterhouses should be immediately removed and stored in closed, water tight silos, tanks or containers.

Collection and transport

1. Materials should be in a closed water tight container that can be easily cleaned and disinfected.
2. Materials should not be allowed to deteriorate.
3. Vehicles used for transportation of such materials should not be used for other purposes.
4. Leakage and aerosol formation during transport should be prevented.
5. People involved in the work should wear disposable gloves and other protective clothing.
6. Storage areas, points of collection, containers, silos, tanks and vehicles used for animal materials should be properly cleaned and disinfected on a daily basis.

Decontamination

1. Decontamination should be carried out as soon as possible, which helps in preventing growth of microorganisms and deterioration.
2. Decontamination should be carried out under strict control of veterinary authorities.

Handling of decontaminated materials

These materials should be stored in a "clean" area to avoid recontamination. They should be protected from insects, birds, rodents etc.

Handling high risk materials

These materials include animals or parts of animals that have died of infectious diseases or were killed in campaigns to eradicate diseases. There should be absolute minimum handling and transport of these materials.

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Isolation of high risk materials on-the-spot

Animals which die of high-risk infectious diseases should be immediately isolated from other animals. The spot where the animal died can also be isolated from the surrounding environment. Drainage by surface water of rain should not be allowed. In all cases the dead animals should be kept covered by a sheet of plastic in a dry area, awaiting veterinary inspection and subsequent decision on further treatment.

Transport of high risk materials

Utmost care should be given in transport of high-risk materials. Cadavers from different locations should not be collected together, except in case of extensive epizootics. On loading special care should be given to protect workers and environment. Loading should preferably be done by mechanical means. Transp ortation vehicles should not be used for any other purpose. They should be water tight and covered to prevent spreading of aerosols and dust. Their design should enable proper cleaning and disinfection. Cleaning and disinfection, controlled by veterinary authorities should be carried out after every transportation.

Destruction of high risk materials

High-risk materials should be destroyed in special incinerators complete destruction is very significant, as some of the microorganisms could be heat resistant.

If this is not possible dead animals and other materials are burned in pits or buried.

Disinfection

The rendering plants and their environment may create public and animal health problems by introduction of pathogenic agents in to the soil. Insects, birds and rodents act as important vectors in the spread of zoonotic diseases. Hence disinfection, which is a method of destroying the pathogen in the environment and of eliminating the risk of human and animal infection from the surroundings, is of great significance. Cleaning procedures at the rendering plant should consist of removal of dirt and other materials by mechanical means and burning them afterwards.

The following disinfectants could be used:

Chlorine containing solutions (3% active chlorine, 4% solution of caustic soda (at 70-80°C) and 2% solution of formaldehyde. Plastic sheets or wooden boards may be burned instead of disinfection by chemicals. Open-flame burning disinfection may be employed for treatment of infected concrete floors, pavements, equipments and tools.

More over the environmental protection should be considered an extremely important part of hygienic measures during all steps of collection, transportation and rendering of dead animals and animal wastes.

recumbency. Among these conditions, the fat cow syndrome is highly fatal and require intense therapy. Animals with fatty infiltration of liver are prone for other conditions like mastitis, metritis, lameness, retention of placenta, prolapase of uterus and abomasal displacement. On post mortem examination the liver will be highly enlarged and pale in colour. Liver samples from biopsy or autopsy will float in water.

Treatment includes

Dextrose solution (5-10 per cent) I/V + insulin (zinc protamine) 150-200 units/ cow in every 36-48 hours S/C.

Niacin (lipolytic agent) 6g/ cow/ day

Methionine (Which enhance the hepatic fat removal) 20-40g orally BID.

Propylene glycol or glycerol-125-250 ml BID.

Rumen liquor transplantation

Parenteral B – Vitamins

To decrease milk production, milk once daily.

5. Low – Milk fat syndrome

Correct the causative factors like reduction of roughage in the diet, chronic lactic acidosis, subclinical hepatic dysfunction, vitamin B12/ cobalt deficiencies excess propylene glycol therapy etc.

Give 0.5 per cent acetic acid (one litre/ day for two weeks) vinegar (5 per cent acetic acid) can be also be used for this purpose.

Conclusion

To detect metabolic diseases it is imperative to conduct routine metabolic profile of the farm animals and individual animals, especially before and after calving. These tests will predict the occurrence of metabolic diseases and based on that, proper control measures can be adopted.

To conclude, the key to the treatment of metabolic diseases lies in the early diagnosis of the condition, prompt treatment and proper managemental practices.

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