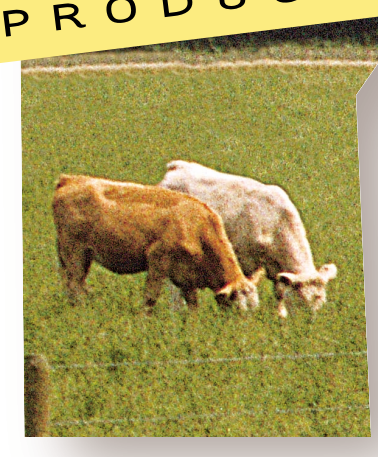
Managing Livestock Mortalities

Living WITH Livestock PRODUCTION

REVISED JANUARY 2005 FACT SHEET #11



Introduction

During livestock production, some animals die or need to be destroyed. These dead animals are known as mortalities or deadstock.

Deaths may occur through natural, accidental or deliberate events. Mortality to offspring or the mother occurs during birth. Death also occurs as a result of illness, disease or injury to growing or mature animals. Sometimes, large numbers of livestock die as a result of a barn fire or when ventilation equipment fails. Such tragic events are known as mass mortality. When animals contract a highly contagious disease, it may be necessary to destroy the entire herd or flock.

All mortalities must be properly stored and then disposed of safely in an environmentally sound manner, as required by the *Livestock Manure and Mortalities Management Regulation*.

How common are mortalities?

Mortalities occur sooner or later in all livestock production. Because of the relative numbers involved, large-scale operations will have more dead animals requiring disposal than smaller farms. Mortality tends to be greater among some types of livestock such as poultry than among other types such as beef cattle. Mass mortality may occur in livestock confined in structures such as barns but is less likely to occur among livestock on the range. However, all livestock are susceptible to various contagious diseases.

What is proper storage of mortalities?

The Regulation requires that mortalities be stored in a secure manner.

Secure storage:

- prevents access by dogs, foxes, coyotes, racoons and crows
- helps to prevent the possible spread of infectious diseases
- prevents contamination of groundwater and surface waters

Mortalities must be stored in a frozen state or kept refrigerated if they cannot be disposed of within 48 hours of death. Many intensive livestock operations have a separate freezer or refrigerated storage for this purpose. Producers who are able to dispose of mortalities within 48 hours of death rely on specially designed, covered steel or heavy-duty plastic bins for secure storage.

What is proper disposal?

The Regulation requires one of four methods of disposal of mortalities. These are rendering, composting, burial or incineration.

Rendering

Rendering refers to a high temperature process whereby materials such as deadstock are sterilized and converted to useful products, such as some plastics and meat or bone meal.

Although several rendering plants are located in Manitoba, only one firm offers a pick-up service and accepts deadstock from farms. High costs for transportation to the rendering facility and a limited market for the rendered product reduces availability of the service for operators located some distance from Winnipeg.

Preparing to pick up mortalities from a storage bin.

Prepared by Manitoba Agriculture and Food and Rural Initiatives, Manitoba Conservation and Manitoba Health.

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Composting

Composting promotes decomposition of animal and plant material by naturally occurring bacteria. It is an aerobic process that uses oxygen to stimulate growth of bacteria and minimize creation of foul odours.

Proper composting requires the correct balance of carbon, nitrogen, oxygen and water to feed the bacteria that do the work. Typically, bulk carbon sources such as wood shavings or straw must be added to balance the nitrogen present in the animal tissue. Additionally, the mixture must be stirred or turned occasionally to ensure an adequate supply of oxygen is available. Temperatures as high as 65°C may be achieved in an active compost pile. This destroys most disease-causing organisms that may have been present. Composting of deadstock typically takes two to three

Properly designed and operated composters provide a safe, environmentally sound way of converting mortalities to a useful product.

months to produce an end product that is a stable, nutrient rich material. Producers use the material as a fertilizer on crops and to improve the quality of soils.

A properly designed composting site includes a base of clay or other material that prevents leaching into groundwater. The compost may be contained on three sides by concrete or wooden timbers. The site should be surrounded by a fence to secure against scavengers. A roof to divert rain may be helpful. The regulation requires that composting sites be located at least 100 metres from any watercourse, sinkhole, spring or well. The process must not cause pollution of groundwater, soil or surface water.

Burial

Burial is often the most practical option for small producers. The Regulation requires producers with 300 or more animal units to obtain approval from Manitoba Conservation before disposing of deadstock by burial. Burial may pose some risk to groundwater if sufficient clay materials are not present. Burial is the best choice in the event of a fire, where steel, concrete or other materials mixed with the mortalities make them unfit for rendering. Buried deadstock must be at least one metre above the water table and must be covered by at least one metre of soil. The site should be mounded and maintained to prevent rain from collecting and soaking into the ground. The regulation requires that burial sites be located at least 100 metres from any watercourse, sinkhole, spring or well. Burial must not cause pollution of groundwater, soil or surface water.

Some landfills are authorized to accept mortalities. Where permitted, the mortalities must be buried the same day they are delivered to the site.

Incineration

Incineration does not mean open air burning of carcasses, but, the burning of mortalities in a specially designed container. Incinerators must be registered and meet the requirements of the *Incinerators Regulation* under the *Environment Act*. This ensures that the equipment meets minimum standards to achieve complete and proper combustion. The regulation also restricts the intensity of smoke and particulate matter that may be emitted. Incineration generally has not been used to a significant degree because proper incinerators and fuel, usually propane or natural gas, are costly.

Sometimes it is necessary to burn large numbers of carcasses as quickly as possible to control the spread of highly contagious diseases. These are unique circumstances. Such emergency carcass disposal must be conducted according to requirements of the federal *Health of Animals Act*.

Summary

Livestock deaths occur through natural, accidental or deliberate events. The *Livestock Manure and Mortalities Management Regulation* requires that mortalities are stored in a secure manner before disposal. Rendering, composting, burial and incineration are acceptable methods of disposal providing they are conducted in accordance with regulatory requirements.

For further information about livestock production, refer to other titles in the series: "Living with Livestock Production," available from Manitoba Agriculture, Food and Rural Initiatives offices.
More detailed information can be found on the Internet at www.gov.mb.ca/agriculture/livestock. Copies of the Farm Practices Guidelines for Hog Producers (1998 edition) and Poultry Producers (2000 edition) in Manitoba are available from Manitoba Agriculture, Food and Rural Initiatives offices in rural Manitoba and from Agriculture Publications 8th floor, 401 York Avenue, Winnipeg MB R3C 0P8 (FAX: 204-948-2498)*

** The 1995 editions of the other titles of the series are presently available; they are being updated.*