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9.0 DISPOSAL OF FARM WASTE

9.1 Disposal of Dead Animals

Refer to the *Destruction and Disposal of Dead Animals Regulations* under the *Livestock Diseases Act* in Section 3 for details on regulations pertaining to the disposal of dead animals. A copy of these regulations may be obtained from an Alberta Agriculture, Food and Rural Development (AAFRD) office, or by visiting the AAFRD Web site at www1.agric.gov.ab.ca. Two other useful references are: *Livestock Mortality Burial Techniques (Agdex 400/29-2)* and *Livestock Mortality Management (Disposal) (Agdex 400/29-1)*.

Some death loss will occur on operations, no matter how well they are managed. It is important to dispose of dead animals quickly and effectively to reduce the risk of disease. It is also important in maintaining good neighbour relations. Carcasses can be a source of disease if scavenged by wildlife or pets. Some of these diseases can then be passed back to livestock or even humans.

The current *Destruction and Disposal of Dead Animals Regulations* requires all dead animals be disposed of within 48 hours by incinerating, burying, rendering, composting or natural disposal (scavenging). A dead animal may be stored for more than 48 hours after death if it is stored:

- For not more than one week in an enclosed structure with impervious walls and floors that have been constructed for the storage of dead animals.
- Outside during winter months when the ambient temperature is low enough to keep the dead animal completely frozen. Or,
- In a freezer unit.

There are restrictions on the use of composting, burial and natural disposal that must be followed in order to minimize the risk of disease spread and nuisance concerns. Composting, burial and natural disposal sites

are required to be specific distances from waterways, well sources, major roads, residences and parks. For more information on these restrictions, refer to Section 3 or the *Destruction and Disposal of Dead Animals Regulations*. These sites must be on the producer's own property or property leased by the producer. Animals euthanized by drugs or those known to have died from infectious diseases or reportable diseases must not be disposed of by natural disposal.

Storage. Use special storage bins, or refrigerate or freeze carcasses until they can be taken to a rendering facility. This reduces odour, keeps them out of sight and prevents scavenging. Locate dead animal storage areas in areas that will minimize the spread of disease, for example, at the entrance to a farm site, to prevent collection vehicles from having to enter the property.

Clean up. Ensure storage areas are thoroughly cleaned after each pickup and that wastewater does not run into streams or other surface water.

Burial. Ensure dead animals are buried promptly to control odour, insects and scavenging. In the winter, during periods of intense cold, this may be difficult due to frozen ground. Be prepared to store the carcasses or have them rendered during these times. Locate the burial pit area away from livestock and screen it from view using trees, shrubs and fences. Do not locate burial pits where runoff could contaminate surface water or near wells or other water sources.

Dispose of other animal tissue waste such as afterbirths and tissues from surgery (e.g. castration) as carcasses, or send to a landfill in a sealed plastic container or bag. Blood or blood products from animals can be safely flushed down the drain.



9.2 Disposal of Veterinary Waste

9.2.1 Sharps

Sharps are veterinary and laboratory materials capable of causing cuts or punctures. Sharps include needles, syringes, scalpel blades, slides, cover slips, pipettes, broken glass and empty or expired pharmaceutical containers. There is a risk of needle stick injuries or cuts when these materials are not handled or disposed of properly. Certain drugs or vaccines may cause reactions or infections if they are present on broken glass or used needles that break the skin. Blood on used needles, collection tubes or other equipment may contain viruses or bacteria that can cause illness following a cut or needle stick injury. There are currently no regulations covering the disposal of sharps in agriculture.

To safely dispose of sharps:

Separate sharps from other waste. Injuries can occur while handling sharps on the farm or at the landfill, if staff are unaware of their presence, or if they are not in rigid containers. Plastic bags are unacceptable.

Use a labelled rigid sharps container for disposal. For needles and surgical blades, use a rigid plastic or metal puncture-proof container with a sealed lid. These can be

obtained at many local veterinary clinics. Label clearly as sharps containers and not for recycling. A plastic jug with a narrow mouth, or a 20-litre (5-gallon) pail with a narrow opening in the lid also works well. Injuries can occur if workers try to retrieve an object from the container, so use narrow-mouthed containers or make a small hole in a well-sealed lid. Ensure children or animals cannot remove the lid. Do not attempt to recap needles before disposal – this is a common cause of needle stick injury. For pharmaceutical bottles and syringes, use a pail or other rigid container.

Remove waste from the farm. Take pails of bottles and syringes and containers of waste needles and surgical blades to the local veterinary clinic or hospital for disposal. Contact these facilities to ensure they accept these waste products. There are also private companies that pick up medical waste. Contact a local veterinary clinic or hospital for information. Labelled sealed containers can also be taken to Class 2 landfills, which accept medical waste and have perimeter fencing.

Do not burn sharps containers.

9.2.2 Expired medicines

Regularly check all drugs for the expiry date. Expiry dates appear on the label as EXP 08 2000, for example, or as 24APR01. All drugs past the expiry date should be discarded, as product safety and efficacy can no longer be guaranteed.

Medicines not past their expiry date sometimes need to be discarded as well. Products such as vaccines must be handled carefully (e.g. refrigerated) to maintain efficacy. If in doubt about how a product has been handled and whether it is still safe or effective (e.g. vaccine left at room temperature overnight), consult a veterinarian.

On some vaccines, the label states “Use entire contents when first opened.” The remaining vaccine should be discarded after vaccination is completed – consult a veterinarian.

There are two classes of expired medicines – unused (unopened) and used (opened). Return unused expired drugs to the point-of-purchase, such as the veterinary clinic. Many manufacturers will accept them for disposal. Discard used or expired drugs the same way as sharps. Modified live virus vaccines should be rendered non-infectious before disposal to prevent the virus from potentially infecting workers or animals. This can be done by freezing, autoclaving, burning or adding bleach to the bottle. When disposing of either used or unused expired medicines, do not attempt to empty or wash bottles – discard them with their contents.

9.3 Disposal of Chemical Farm Waste

Chemical farm waste includes pesticides (herbicides, fungicides, insecticides, rodenticides), pesticide-treated seed,

topical parasiticides (pour-on or powders for treating parasites), cleaners, disinfectants and petroleum products.

9.3.1 Pesticides

For complete details on safe pesticide use and disposal, consult the *Crop Protection Manual* (Agdex 606-1) available from AAFRD

Publishing Branch, 7000-113 Street, Edmonton, Alberta T6H 5T6.

9.3.1.1 Pesticide disposal

Be careful when disposing of unwanted or expired pesticides. Pesticides are hazardous wastes and cannot be disposed of in sanitary landfills or by burning. Offer any leftover supplies to neighbours. Use a licensed hazardous waste disposal firm if pesticides

have no further use. Names of companies that are licensed to handle hazardous waste can be obtained from Alberta Environmental Protection's Recycle Information Line at 1-800-463-6326.

9.3.1.2 Pesticide storage

Read the label for specific storage instructions. Store pesticides in a cool, dry place in their original containers. Keep pesticides from freezing and protect from excessive heat.

Do not store near feeds, food or fertilizers. Never store pesticides in well-houses or feed mixing and milling rooms. As well, pesticides

should never be stored or mixed within 30 metres of an open body of water.

Pesticides should not be stored around the home and should be out-of-reach of animals and children. Store products that are highly toxic to mammals, such as certain rodenticides and parasiticides, under lock and key.

9.3.1.3 Pesticide container disposal

Carefully dispose of empty pesticide containers. Unrinsed, empty pesticide containers have the potential to contaminate ground and surface water, and can be toxic to fish and wildlife. Under the *Alberta Environmental Protection and Enhancement Act*, non-refillable plastic or metal pesticide containers (restricted, agricultural and industrial products) must be disposed of at a pesticide container collection site. A list of pesticide container disposal sites in Alberta and their hours is available from each municipality, in the *Crop Protection Manual*, or from Alberta Environmental Protection.

Containers must be clean (triple-rinsed or pressure-rinsed) and well-drained (dry) before disposal. In most cases, triple rinsing leaves

plastic, metal or glass pesticide containers more than 99 percent free (less than 1 ppm) of residues. For details on rinsing, consult the *Crop Protection Manual*.

Paper bags and cardboard containers should be thoroughly emptied and disposed of in a sanitary landfill. Do not burn paper bags or cardboard containers. Outer packaging (e.g. cardboard box) can be burned or disposed of in a regular landfill. Some pesticide container sites have bins or separate areas for collecting outer packaging materials.

It is also important to dispose of containers from topical parasiticides, (e.g. pour-on compounds or powders for lice and mange) in a safe manner. These compounds can be

toxic to fish, wildlife, other livestock and humans. These products should be kept out of waterways and streams and not be allowed to contaminate foods or feeds. Some products are controlled under the *Pest Control Products Act* and it is an offence to use them other than as directed on the label. Containers should not be

re-used and empty containers should be made unsuitable for reuse. For specific information on the disposal of unused and unwanted product and cleanup of spills, contact the regional office of Conservation and Protection, Environment Canada.

9.3.2 Handling and disposal of petroleum products (fuels and lubricants)

Fuels and lubricants can be toxic to humans, livestock, wildlife and fish. Proper storage and handling on the farm are necessary to limit

risks to human and animal health, and the environment.

9.3.2.1 Health and environmental risks

Gasoline and diesel fuel. In humans, skin contact with gasoline and diesel fuel can cause irritation or chemical burns, while breathing vapours can cause headaches, dizziness and nausea. These products are possible causes of cancer. Spilled fuels will kill plant life and fish. Livestock will sometimes drink fuel, causing bloat and vomiting, depression, confusion, pneumonia and death, depending on the amount ingested. There is no effective treatment.

Waste lubricants. Waste lubricants include used motor oil, transmission fluid and power steering fluids. Like fuels, these products are petroleum distillates. They also may contain heavy metals such as lead, arsenic, cadmium

or chromium, which can be toxic or leave residues in meat and milk. All lubricants should be washed from exposed skin as soon as possible. Livestock will consume these products and therefore should not have access to them.

Ethylene glycol (antifreeze). Antifreeze is extremely toxic to the kidneys of livestock, pets, wildlife and people. It is sweet tasting, so some animals, particularly cattle and pets, will drink large quantities if given the opportunity. Shortly after ingestion, animals appear to be intoxicated. They may vomit, become weak, convulse and die. If treated early, they may survive, but generally ethylene glycol poisoning is fatal.

9.3.2.2 Financial/liability risks

Lending and insurance agencies are concerned about the environmental risks associated with fuel storage or spillage, as well as the storage of lubricants and glycol, both new and used. They may require environmental assessments before approving loans or insurance policies. Spills of fuels or lubricants may come under the jurisdiction of the *Environmental Protection and Enhancement Act* (EPEA), and if deemed serious enough, will request appropriate cleanup measures.

Storing and Handling Fuel on the Farm, published jointly by United Farmers of Alberta and AAFRD, provides more complete details on storage tank options, and the risks associated with fire, leakage, spillage and evaporation. It can be obtained from AAFRD, Publications Branch, 7000 – 113 Street, Edmonton, Alberta, T6H 5T6.

9.4 Leaks and Spills

The best and lowest cost method of dealing with a potential environmental problem is

prevention. However, leaks and spills are still likely to occur.

9.4.1 Fuel leaks/spills

To prevent environmental contamination:

- Always maintain separation distances from buildings, ignition sources and propane tanks.
- Store combustible materials away from fuel storage tanks.
- Keep vegetation mowed.
- Monitor fuel storage tanks to catch leaks early.

Underground tanks. In the event of a confirmed leak in an underground tank or line, contact Alberta Environmental Protection (1-800-222-6514). Personnel from Alberta Environment will outline cleanup procedures.

Above ground. In the event of an above-ground spill or leak:

- Stop the flow of fuel. Remove all sources of ignition. Be prepared to use a fire extinguisher. Remember, gas vapours flow downhill and are extremely explosive.
- Contain the spilled fuel by damming with earth or another suitable absorbent material. Protect water sources and septic systems.
- Work from the upwind side to avoid inhaling vapours and becoming engulfed in flames if a fire starts.

- Clean up and dispose of all fuel by shoveling the contaminated earth or absorbent material into metal or plastic containers. Be extremely cautious about sparks from rocks and metal. Dispose of contaminated cleanup materials in accordance with Alberta Environmental Protection guidelines.
- Ensure that all ignitable vapours are dispersed before resuming normal activities.
- It is a regulatory requirement that all spills and leaks of 200 litres or more of gasoline or diesel fuel be reported to Alberta Environmental Protection. Spills or leaks of lesser amounts must also be reported if they have, or may have, an adverse effect on the environment. An adverse effect is defined in the *Environmental Protection Enhancement Act (EPEA)* as impairment of or damage to the environment, human health or safety, or property. Any leak or spill of any amount into a watercourse, water body or groundwater must be reported.

9.4.2 Lubricant leaks/spills

Leaks or spills from lubricant drums or containers can be contained using the grated pan-pallet that the containers are stored on. Floor spills can be cleaned up with sawdust, rags or other absorbent materials. Numerous commercial companies have specific products for preventing or cleaning up lubricant spills on concrete. For spills on soil, excavate the soil and dispose of it in accordance with Environmental Protection guidelines.

Disposing of waste lubricants. Most bulk fuel agents will accept waste oil, oil filters and oil containers, as well as solvents, cleaning

fluids and glycols. Engine oil, transmission fluid, hydraulic fluid and power steering fluid can be combined, but must not contain water, solids, solvents or glycols. Most bottle depots also have facilities to accept smaller volumes of waste oil, filters and containers. Several large waste-oil companies will pick up waste oils on the farm, if the farm has about 1,000 litres of product per visit. The farmer may even get paid one or two cents per litre if the waste oils are not contaminated. These companies can be found in the Yellow Pages under Oil-Waste.

Disposing of glycols. Do not drain glycols (e.g. antifreeze) onto the ground. Collect waste antifreeze in plastic containers and deliver to the depots mentioned above.

None of the above products should be accessible to livestock, children or wildlife. Containers should be well-labelled and have secure child-proof lids. Most cases of poisoning result when these products are accidentally left accessible to children or animals.

Motor oils or fuels should not be used directly on the skin of livestock. While these products were once recommended in the treatment of certain diseases, ingestion, even in small quantities, can produce illness or residue in the meat and milk products. In addition, these products should not be used to control dust in yard sites or on roads.

9.5 Options for Disposal of Contaminated Soils

Land spreading. Using naturally occurring soil micro-organisms, in conjunction with cultivation, organic matter (manure) and added nitrogen fertilizer, appears to be a reasonable method of breaking down hydrocarbons. Specific details, as to amounts of contaminated soils, per given area of cultivation for a given length of treatment time, are presently being studied. However, an adequate mix would appear to be 2.5 centimetres (1 inch) of contaminated soil spread on a field surface with approximately 45 kilograms (100 pounds) of manure and about 0.1 kilograms (1/4 pound) of nitrogen per 95 m² (100 ft.²) and rototilled to a depth of 12 centimetres (5 inches). Work the area (aerate) every four weeks for at least one

year to ensure adequate breakdown of fuels and possibly for two or more years for the breakdown of waste oils.

Landfill. Haul contaminated soil to an approved landfill site. Contact the landfill authority to ensure that the site accepts contaminated soil.

Burning. Approved mobile thermal extractors can be used; they have the proper after-burners to completely combust all of the hydrocarbons and heavy metals. Names of companies providing this service can be obtained from Alberta Environment. Open burning of contaminated soil or cleanup materials is not an approved method of disposal.