# INFOSHEET #9 BEYOND THIS DISPOSAL OF LIVESTOCK MORTALITIES

How to address concerns identified in Environmental Farm Plan Worksheet #9



Based on Environmental Farm Plan Workbook, 4th ed. 2013

This infosheet outlines options for your operation to ensure proper handling and disposal of • Co

For deadstock that are located in a Source Water Protection Zone, the risk management measures needed to address the risk will be determined through the Source Water Protection process in your particular area. The measures may be the same as or more than required by EFP due to the proximity to a municipal drinking water supply. For more information, contact your local municipality or check their website under Source Water Protection Planning.

All options in this infosheet are classed as Actions or Compensating Factors.

livestock mortalities – normally referred to as deadstock.

• Actions address the identified concern, and will change the EFP rating to (3) or Best (4).

• **Compensating Factors** are alternatives that will adequately address the concern, but will not change the rating in the EFP worksheet.

If the disposal of deadstock creates off-site impacts for air or water quality, it could result in complaints to Ministry of the Environment and Climate Change and a possible on-site investigation.

In most cases, you'll need more information before implementation. Sources for more information are listed at the end of this infosheet.

For help with technical terms, please see the full glossary in your EFP Workbook.









#### 9-1. Method of disposal of deadstock

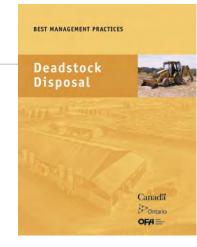
#### BACKGROUND

Mortalities are inevitable and must be properly disposed of to safeguard everyone's well-being. Improper management or disposal of deadstock poses risks to the environment, and to animal and public health – including the farm family's.

Leaving deadstock in natural areas or placing them on manure piles creates odours, attracts unwanted scavengers, predators, flies and disease, and is against the law.



The heat generated by microbial decomposition in the composting process destroys most pathogens.



#### WHAT CAN YOU DO?

#### **OPTION 1 – ACTION**

Hire a licensed deadstock collector (if this service is available). This relieves you of the planning and labour required for on-farm disposal.

You will still need to identify and address biosecurity concerns. Deadstock storage and collection areas must be properly sited and screened from public view.

OR

Transport the deadstock to an approved facility, including an anaerobic digester, approved disposal facility, or veterinary service (if taken for post-mortem).

Note that deadstock must not be in public view, and must be transported in a leakproof container that can be cleaned.

#### **OPTION 2 – ACTION**

#### Compost the deadstock at a suitable site, provided you maintain proper soil separation distances and the following are available:

- substrate, e.g. sawdust, wood chips
- equipment substrate chopper, loader, turning equipment, etc.
- labour
- spreader to land-apply compost
- land for spreading.

See 9–13 to 9–18 for more information.

How livestock mortalities are disposed of has implications for the environment, animal and public health, and consumer confidence. This BMP book will help you compare options and implement regulation-compatible practices.

#### WHAT CAN YOU DO?

#### OPTION 3 – ACTION

# Place the deadstock in disposal vessel, provided the vessel:

- is made of impervious materials
- has a duct to allow insects to enter
- has a covered hatch for depositing deadstock
- is properly sited.

See 9–19 to 9–22 for more information.

#### **OPTION 4 – ACTION**

#### Incinerate the deadstock. The incinerator must:

- be an approved two-stage incinerator
- have an ETV Canada certificate.

# Adhere to instructions in the operating and maintenance manual.

See 9-23 for more information.

#### **OPTION 5 – ACTION**

#### Bury the deadstock, provided:

- there are no (or limited) tile drains near the burial site - more than 15 m (50 ft) separation
- the layer of soil above bedrock or an aquifer is more than 0.9 metre (3 ft)
- the soil type is appropriate for burial.

See 9–7 to 9–12 for more information.

## 9-2. Timing and handling prior to disposal

BACKGROUND	WHAT CAN YOU DO?	
Handling and disposing of deadstock promptly is a key	OPTION 1 - ACTION	
component of maintaining biosecurity on the farm. Proper disposal of deadstock will reduce the opportunity for scavenging	Keep deadstock in a leakproof container, out of public view.	
and disease transmission.	Dispose of deadstock within 48 hours (preferably 24 hours) of the	
Proper cold or frozen storage will also result in more efficient pickup by licensed collectors.	animal's death, using an approved disposal method – unless the deadstock is being held for post-mortem.	Partonent
	OPTION 2 – ACTION	
	Store deadstock in cold storage:	
	• deadstock may be held in cold storage (4°C or less) for up to 14 days.	
	OPTION 3 – ACTION	
	Store deadstock in a freezer prior to disposal:	A household freezer can be used to temporaril store frozen deadstock.
	• deadstock may be held up to 240 days in frozen storage.	

### 9-3. Transportation of deadstock on a public road prior to disposal

See also OMAFRA factsheet: Deadstock Disposal Options for On-Farm, Order no. 09-025

## 9-4. Location of on-farm disposal site in relation to nearest neighbour's closest single residence, barn, feedlot or yard

BACKGROUND	WHAT CAN YOU DO?	
When selecting an on-farm disposal site, consider neighbouring	OPTION 1 - ACTION	A DESCRIPTION OF A DESC
residences and livestock areas. Regardless of how well deadstock is managed or how promptly, there may be occasional unpleasant odours.	Relocate the disposal site at least 150 m (500 ft) away from the single residence, barn, feedlot or yard.	-
Separation distances between burial sites and feeding areas, sick	Close disposal vessels and burial sites that do not meet setback distance.	- Anna -
pens and maternity pens ensure that diseases are not transmitted to other vulnerable animals.	OPTION 2 - ACTION	REN
	Use alternative disposal methods such as a deadstock collector service.	

#### 9-5. Location of on-farm disposal in relation to other sensitive land uses

far as possible from neighbouring WHAT CAN YOU DO? properties to minimize odour concerns BACKGROUND and protect livestock health. Disposal sites should be chosen with regard for neighbouring **OPTION 1 – ACTION** residences and other sensitive areas such as parkland, industrial Relocate sites for deadstock collection, composting, and incineration far land, highways, community or institutional use. Regardless of enough away from sensitive land uses to achieve a 4 rating as described how well deadstock is managed or how promptly, there may be in the worksheet. occasional unpleasant odours or sights. Distance, if available, is usually the best solution. Cease using disposal methods that do not meet setbacks to sensitive land. **OPTION 2 – ACTION** Use alternative disposal methods such as a deadstock collector service. Keep the disposal site as far as

# METHODS OF DISPOSAL

#### 9-6. Emergency planning for catastrophic losses

BACKGROUND	WHAT CAN YOU DO?	
Advance emergency planning is well worth your time and effort.	OPTION 1 - ACTION	
In the event of an emergency, an organized, effective response will help mitigate stress for you and your family during a difficult and emotional time.	Discuss emergency situations with first responders, your insurance agent, commodity groups or OMAFRA staff to explore options for disposal of deadstock.	
Discussing options with insurance agents can ensure you have the appropriate coverage for your operation.	<b>Create an Action Plan for reference in the event of an emergency.</b> Emergencies may include weather extremes, e.g. flooding, ice storm, poor access in winter.	
Review and assess seasonal farm operations that may be prone to risk of fires or ventilation problems.	Consider seasonal changes in the farm operation that might increase the risk of fire or ventilation problems.	Learn more about fire prevention
	Consider seasonal differences – winter or summer – that may affect the options available for disposal.	measures with OMAFRA's <i>Reducing</i> <i>the Risk of Fire on Your Farm,</i> Publication 837.

Try to locate the disposal site as

# BURIAL 9–7. Distance from burial pit to nearest well

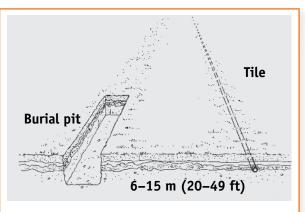
BACKGROUND	WHAT CAN YOU DO?	
Separation distances from burial pits to wells will help to ensure	OPTION 1 – ACTION	
a safe source of drinking water for the farm family, livestock and neighbouring communities.	Immediately cease use of any burial site that is too close to a well.	
	OPTION 2 - ACTION	
	Select new location for burial sites based on the potential for ground water contamination and distance to nearest well that results in a rating of 3 or higher.	Il est essentiel de choisir un site d'enfouissement qui permettra une bonne décomposition et réduira les risques de contamination des eaux de
		surface et souterraines.

#### 9-8. Distance from burial pit to field drainage tile

BACKGROUND	WHAT CAN YOU DO?
Leachate from a burial pit could potentially enter a field drain- age tile, and then be discharged into surface water. This is both a potential biosecurity risk and a source of contamination.	OPTION 1 - ACTION (PLANNING)
	Properly abandon burial site and establish a new burial site that is farther than 15 m (50 ft) from the drainage tile.
Also, excavating near a field drainage tile increases the risks that the tiles themselves will be harmed.	



For more information about in-field drainage, see this BMP publication. Cropland Drainage explains how surface and subsurface drainage systems function, and presents options for improvement, construction, maintenance, and troubleshooting.



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Deadstock must be buried below the depth of any tile drains that are within 6-15 m (20-50 ft) of the burial pit.

for unused wells.

#### 9–9. Distance from burial pit to nearest surface water or tile inlet

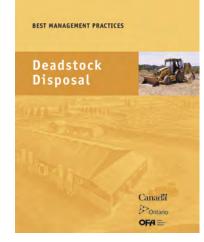
BACKGROUND	WHAT CAN YOU DO?	and the second second
Burial of deadstock near surface water can increase the risk that it	OPTION 1 - ACTION (PLANNING)	CONTRACTOR D
will heave out of the ground during rainfall or spring flooding events.	Select a new location for burial sites based on the potential for surface water	
Deadstock buried too close to surface water or tile inlets increases the risk that surface water will be contaminated.	contamination and distance of flow path that results in a rating of 3 or higher.	

#### 9-10. Burial pit soil conditions

BACKGROUND	WHAT CAN YOU DO?	As the flow- surface inlet
Adequate soil cover is necessary to reduce the risks of	OPTION 1 - ACTION	the risk of c
scavenging and disease transmission.	Dig a test pit in area of future burial site to verify:	reaching sur
The soil microbes responsible for decomposition are most effective in soils that are not too dry or too wet.	<ul> <li>there is more than 0.9 m (3 ft) of soil cover over bedrock or aquifer</li> <li>it is not located on organic soil, sandy, sandy loam, or loamy sand soil.</li> </ul>	
An adequate separation distance between the bottom of the burial pit and the aquifer is needed to ensure that any leachate is properly managed by the soil organisms.	Verify Conservation Authority flood mapping to ensure selected area for burial is not prone to flooding.	SOIL SU OF WELLIN

#### 9–11. Volume of deadstock in a burial pit and distance between burial pits

BACKGROUND	WHAT CAN YOU DO?	
The greater the contact between the surface of the deadstock and	OPTION 1 - ACTION	ANT OF ANTEN BRAINER
the soil microbes, the faster the rate of decomposition in the burial pit. Smaller burial pits, with a distance between pits, maximize the ability of soil microbes to decompose buried deadstock.	Identify several burial pit locations, separated by more than 60 m (197 ft), and do not dispose of any more than 2,500 kg (5,500 lb) in any one burial pit.	Use a soil map, legend and report



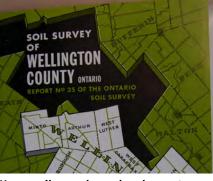
Siting considerations and other key management facets for the burial option are described in full on pages 84–93.



There should not be more than 2,500 kg (5,500 lb) of deadstock in a single burial pit.



/-path distance from a et to a burial pit increases, contaminated overland flow urface water decreases.



Use a soil map, legend and report to shortlist candidate sites on your property.

### 9–12. Soil cover

BACKGROUND	WHAT CAN YOU DO?	
As deadstock decomposes, there can be settling within the burial	OPTION 1 - ACTION	
pit. This depression may result in surface runoff accumulating in the area, decreasing the rate of decomposition.	Mound the soil over the burial pit enough to compensate for the settling of soil once the deadstock has decomposed.	

# COMPOSTING

## 9-13. Distance from composting site to nearest well



Adequate soil cover will allow for settling and help to shed surface y to shed surface water.

	BACKGROUND		WHAT CAN YOU DO?	settling and help to shed surface water.
		eachate from composting sites, and it is	OPTION 1 – ACTION	
		ter away from sources of drinking water.	Relocate the composting site away from the well.	
	Do not allow leachate to a	accumulate near water wells.	Decommission the previous site if necessary by removing the composting material. If the material is fully composted, it could be land-applied.	
	Deadstock	Add substrate to the existing pile to reduce the risk of leaching while the relocated composting site is being completed.		
	Disposal	To learn more about	OPTION 2 - ACTION	
Correct Sectors	composting, see pages 50–70 in this BMP publication.	Select a new location for the well that gives you a rating of 3 or more, and properly abandon and plug the old well according to Regulation 903 of the <i>Ontario Water Resources Act</i> .		
	Canadă		OPTION 3 - ACTION	Locate compost piles away and downhill from wells.
	Poetario OFA≣		Regularly test the well water for bacterial contamination. Take immediate action if it tests positive.	

## 9-14. Distance from composting site to field drainage tile

BACKGROUND	WHAT CAN YOU DO?	
Leachate from a composting site could potentially enter a field	OPTION 1 - ACTION	
drainage tile, and then be discharged into surface water. This is both a potential biosecurity risk and source of contamination.	Relocate the composting site more that 10 m (33 ft) away from drainage tile – the more separation, the better.	A State
	Decommission the site if necessary by removing the composted material. If the material is fully composted, it could be land-applied or placed into the manure storage.	Dra



inage tiles are a conduit to surface water, and composting sites should be located at least 10 m (33 ft) away.

### 9-15. Distance from composting site to nearest surface water or tile inlet

BACKGROUND	WHAT CAN YOU DO?	Contract of the
Composting deadstock near surface water can increase the risk	OPTION 1 - ACTION	
<ul><li>that rainfall or spring flooding events will negatively affect decomposition.</li><li>Excess water may decrease the temperatures inside the pile that are required for proper decomposition.</li></ul>	Select a new location for composting sites based on the potential for surface water contamination and distance to nearest surface water or tile inlet that results in a rating of 3 or higher. Decommission the previous site if necessary by removing the composed	
Deadstock composted too close to surface water or tile inlets increase the risk of surface water contamination.	material. If the material is fully composted, it could be land-applied or placed into the manure storage.	The flow path from a composting site to surface water or tile inlet

#### 9-16. Management of compost pile

BACKGROUND	WHAT CAN YOU DO?	
You can think of composting like a recipe. Appropriate quantities,	OPTION 1 - ACTION	
mixing and management of the deadstock and substrate will ensure successful composting. Consult the BMP booklet <i>Deadstock Disposal</i> for technical	Add appropriate substrates to the pile, or add additional amounts so that no parts of the deadstock are visible, and the ratio of substrate to deadstock is 75:25.	
information on composting. See pages 50–70.	Add substrate to soak up leachate that emanates from the pile.	
	Divert clean, upslope water away from the compost pile to reduce the potential for leachate.	
	Turn compost pile at regular intervals as needed for good composting.	A roofed compost site will divert clean water from mixing with
	<i>Note:</i> If scavenging is a problem, especially for windrows, then it may be necessary to use a compost bin system instead. Gates can be added to a bin system to keep	compost and producing runoff.
	scavengers out. A roof or tarp over a compost site will divert clean water, preventing	
	it from mixing with compost and producing runoff.	

#### 9–17. Composting site soil conditions

BACKGROUND	WHAT CAN YOU DO?	two and
The soil under the compost pile absorbs nutrients and acts as a	OPTION 1 - ACTION	
filter between the pile and the aquifer below. An impervious base, such as concrete, can make it much easier to move compost with farm machinery. Any liquid coming off the pile or the base can be absorbed with additional substrate	Relocate the composting site to an area with appropriate soil type(s) that has more than 0.9 m (3 ft) of soil cover over bedrock or aquifer, and is not located in any flood plain or area prone to flooding.	
the pile or the base can be absorbed with additional substrate.	OPTION 2 - ACTION	If the compo and emptied
	Construct an impervious base (e.g. concrete, asphalt) for the composting site.	concrete floo ease of use,



should exceed 75 m (250 ft).

If the compost pile will be mixed and emptied with a loader, a concrete floor is preferred for ease of use, cleanliness and runoff management.

## 9-18. Land application of dead animal compost

BACKGROUND	WHAT CAN YOU DO?	(Area) 6. action of a
Properly composted material can be a valuable nutrient source	OPTION 1 - ACTION	
for cropland. Improperly composted material containing partially decomposed materials is a biosecurity risk to the farm, and encourages scavengers.	Land-apply completely composted material to cropland (not on pasture or land used to graze ruminants) that is owned or controlled by the farmer. As with other nutrient sources, application rate should match agronomic	
The Canadian Food Inspection Agency (CFIA) recommends that compost produced from Specified Risk Material (SRM) is not spread on pasture land or on land directly used to graze domestic ruminants. If SRM is spread on pasture or grazing land, then do not allow ruminants access to these fields for at least five years.	requirements of the field crops. Keep records of the location of compost sites, the volumes, deadstock records, the location of spreading sites, and volumes spread.	
Federal regulations prohibit the sale or removal of on-farm composted material containing SRM from the farm of origin. Distribution or sale of on-farm compost is also contrary to the <i>Nutrient Management Act, 2003 (NMA)</i> Disposal of Dead Farm Animals Regulation.		Properly finished compost should not contain any recognizable parts of deadstock.

# DISPOSAL VESSEL

## 9-19. Distance from disposal vessel to nearest well

BACKGROUND		WHAT CAN YOU DO?	
A disposal vessel must be leakproof when installed. Over time, it may deteriorate. Therefore it is important to have adequate separation distance between the vessel and a well to reduce the		OPTION 1 - ACTION Close disposal sites located too close to well.	
risk of contaminating well v	water.	OPTION 2 - ACTION	
		Select disposal vessel site based on the potential for ground water contamination and distance to nearest well that results in a rating of 3 or higher:	
В	EST MANAGEMENT PRACTICES	• 76 m (250 ft) away from a drilled well	
, v	Vater Wells	<ul> <li>150 m (500 ft) from a bored, dug or sand point well</li> <li>250 m (820 ft) from a municipal well.</li> </ul>	Disposal vessels are scavenger-proof, leakproof containers into which dead- stock is placed to decompose naturally
	more ab	ant to learn out how your ks, and how to	

well works, and how to safeguard well water quality, see this BMP publication.

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## 9-20. Distance from disposal vessel to field drainage tile

BACKGROUND	WHAT CAN YOU DO?
A disposal vessel must be leakproof when installed. Over time,	OPTION 1 – ACTION
it may deteriorate. Therefore it is important to have adequate separation distance between the vessel and field drainage tile to	Close disposal sites that are not situated properly.
reduce the risk of contaminants flowing into the tile.	Choose a new location for future disposal vessels that is greater
In addition, excavation for the disposal vessel may harm the field tiles themselves if done too closely.	than 15 m (49 ft) from a field drainage tile.

#### 9-21. Distance from disposal vessel to nearest surface water or tile inlet, or in an area prone to flooding

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B	ACKGROUND			WHAT CAN YOU DO?	the tile and reaching surface water, maintain an adequate separation distance – greater than
		ar surface water can increase the risk th	nat	OPTION 1 - ACTION	15 m (49 ft) – between the disposal vessel and
		of the ground during rainfall or spring k vessels too close to surface water or t	ile	Close disposal sites that are not situated properly.	field drainage tile.
in	nlets increase the risk that	at surface water will be contaminated. posal vessel will greatly reduce or		Choose a new location that has a flow path of at least 151 m (495 ft) from surface water or a tile inlet, and not in an area prone to flooding	
		ion of the deadstock. Successful disposal vessel relies on the air flow		OPTION 2 – ACTION	
tł		e flies and insect populations within		Select a new location for disposal vessel site based on potential for surface water contamination and distance to nearest surface water inlet or area prone to flooding:	
				• the new location should result in a rating of 3 or higher.	an Inda
		Deadstock Disposal	al	or more information bout proper design, se and management	
		Canadã	ра	f disposal vessels, see ages 75–83 in this MP publication.	Disposal vessels buried near surface water can increase the risk that the vessel will heave out of the ground during rainfall or spring flooding events.

To reduce the risk of contaminants flowing into an nd

## 9-22. Design of disposal vessel

BACKGROUND	WHAT CAN YOU DO?	
Successful use of disposal vessels depends on preventing water	OPTION 1 - ACTION	
from entering the vessel, and having an open vent that allows the flies and insects responsible for decomposition to enter. Leakproof vessels allow heat to be generated, which increases the opportunity for insects to further the decomposition process.	Stop using and properly close disposal vessels immediately that do not meet the design standards – see Option 2. Find an alternative acceptable disposal method such as licensed pickup, proper burial etc.	
the opportunity for insects to further the decomposition process.	OPTION 2 - ACTION	The second secon
	Find and/or modify a container for use as a disposal vessel that meets the following requirements:	4 2 3
	• leakproof	
	• volume no greater than 10 m <sup>3</sup>	Real R
	• impervious when installed	
	<ul> <li>a duct to allow insects to enter</li> <li>a covered hatch for depositing deadstock.</li> </ul>	The purpose of properly closing a disposal vessel is to make it no longer
		usable or accessible.

## **INCINERATION** 9-23. Type of incinerator

BACKGROUND	WHAT CAN YOU DO?
The majority of deadstock disposal options are focused on reducing the risks of surface and ground water contamination. Incinerators pose a different kind of risk: air emissions. An incinerator that is operated improperly or otherwise malfunctioning can result in odour and smoke complaints from neighbouring properties. Improper operating temperatures can decrease the efficiency of the equipment, using additional fuel and energy to incinerate the deadstock.	<ul> <li>OPTION 1 – ACTION</li> <li>Replace the incinerator with a unit that meets the requirements of the Verification Certificate from ETV Canada. Also: <ul> <li>keep records of the temperatures in the combustion chambers at all times during incineration</li> <li>perform regular maintenance on the incinerator according to the manufacturer's specifications</li> <li>ensure that loading rates are adhered to – putting too much deadstock in at one time will decrease the efficiency of the combustion in the unit and increase the maintenance requirements</li> <li>only burn deadstock in the incinerator.</li> </ul> </li> </ul>
Maintaining the incinerator according to the manufacturer's recommendations can extend the life of the equipment.	Deadstock Disposal
	To learn more about the incineration

option, see pages 71–74 in this BMP

publication.

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# FOR MORE INFORMATION

#### Ontario Ministry of Agriculture, Food and Rural Affairs

Many sources of supplementary information are available. Below are some suggestions to get you started. Most can be found online at **www.ontario.ca/omafra** or ordered through ServiceOntario.

Deadstock Disposal Options for On-Farm, Order no. 09-025 Reducing the Risk of Fire on the Farm -- Preventing Fire Spread, Publication 837

#### **BEST MANAGEMENT PRACTICES**

BMP publications are excellent sources to better understand on-farm environmental issues and discover a range of proven, practical options to address them. These materials are available at no charge to Ontario farmers. Below are a few of the titles. To order these and others, see ServiceOntario information.

Buffer Strips

Controlling Soil Erosion on the Farm Cropland Drainage Deadstock Disposal Establishing Tree Cover Field Crop Production Managing Crop Nutrients Manure Management No-Till: Making it Work Phosphorus Primer Streamside Grazing Water Management Water Wells Woodlot Management

# Inquiries to the Ontario Ministry of Agriculture, Food and Rural Affairs

Agricultural Information Contact Centre Ph: 1-877-424-1300 Email: ag.info.omafra@ontario.ca Web: www.ontario.ca/omafra

# Many resources can be ordered through Service Ontario

**Online** at ServiceOntario Publications – www.ontario.ca/publications

**By phone** through the ServiceOntario Contact Centre Monday–Friday, 8:30 am–5:00 pm 416-326-5300 416-325-3408 TTY 1-800-668-9938 Toll-free across Ontario 1-800-268-7095 TTY Toll-free across Ontario

# ACKNOWLEDGEMENTS

At the request of the Ontario Farm Environmental Coalition, consisting of Farm & Food Care Ontario, the Ontario Federation of Agriculture, and the Christian Farmers' Federation of Ontario, the following organizations and people contributed to the revision of this infosheet:

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Best Management Practices publications present in-depth explanations, tips and advice for Ontario farmers.