INFOSHEET #9 BEYOND THIS DISPOSAL OF LIVE UNDER THIS DISPOSAL OF LIVE UNDER THIS MORTALITIES

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

This infosheet outlines options for your operation to ensure proper handling and disposal of livestock mortalities – normally referred to as deadstock.

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.

• 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, Conservation and Parks 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.









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

9–1. Method of disposal of deadstock

BACKGROUND		WHAT CAN YOU DO?	WHAT CAN YOU DO?
Mortalities are inevitable and must be properly disposed of to safe- guard 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		OPTION 1 - ACTION	OPTION 3 – ACTION
		Hire a licensed deadstock collector (if this service is available). This relieves you of the planning and labour required for on-farm disposal.	Place the deadstock in disposal vessel, provided the vessel: is made of impervious materials
creates odours, attracts unw disease, and is against the la	anted scavengers, predators, flies and aw.	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	 has a duct to allow insects to enter has a covered hatch for depositing deadstock is properly sited.
ANDER	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Transport the deadstock to an approved facility,	See 9–19 to 9–22 for more information.
		including an anaerobic digester, approved disposal	OPTION 4 – ACTION
		Note that deadstock must not be in public view, and must be transported in a leakproof container that can be cleaned.	Incinerate the deadstock. The incinerator must:be an approved two-stage incineratorhave an ETV Canada certificate.
		OPTION 2 - ACTION	Adhere to instructions in the operating and maintenance manual.
		Compost the deadstock at a suitable site, provided you maintain proper soil separation distances and the following are available:	See 9–23 for more information.
1220		• substrate e a sawdust wood chins	OPTION 5 – ACTION
The heat generated b the composting proce	y microbial decomposition in ess destroys most pathogens.	 equipment – substrate chopper, loader, turning equipment, etc. 	 Bury the deadstock, provided: there are no (or limited) tile drains near the burial site – more than 15 m (50 ft) separation
	BEST MANAGEMENT PRACTICES	 labour spreader to land-apply compost land for spreading. 	 the layer of soil above bedrock or an aquifer is more than 0.9 metre (3 ft) the soil time is appropriate for burial
		See 9–13 to 9–18 for more information.	See 9–7 to 9–12 for more information.
	Deadstock Disposal	low livestock mortalities are disposed f has implications for the environment, nimal and public health, and consumer onfidence. This BMP book will help you ompare options and implement regula- ion-compatible practices.	

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 dis- posal of deadstock will reduce the opportunity for scavenging and	Keep deadstock in a leakproof container, out of public view.	
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.	Pursue -
	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:deadstock may be held up to 240 days in frozen storage.	A household freezer can be used to temporarily store frozen deadstock.

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

BACKGROUND	WHAT CAN YOU DO?	
Deadstock collectors have the equipment and the vehicles	OPTION 1 – ACTION	
to effectively handle and transport deadstock. They are aware of the importance of biosecurity protocols, especially when travelling to multiple farms, and take appropriate actions to	Hire a licensed deadstock collector to transport deadstock:service is available in many areas of the province.	1.0
clean their vehicles.	OPTION 2 – ACTION	
Deadstock should not be transported on public roads in plain view. Not only is this a violation of the Regulation, but it can result in a negative view of livestock production and agriculture as a whole. Producers may not use public roads to transport deadstock belonging to another producer. Also note that a permit from the Canadian Food and Inspection Agency (CFIA) is required to trans- port dead cattle	Transport your own deadstock on public roads, only if: • deadstock are out of public view	
	 the container is leakproof and can be cleaned afterwards transport is to an approved facility. 	
port dead cattle.		Licensed deadstock collectors have the

Licensed deadstock collectors have the knowledge, equipment and the vehicles to effectively handle and transport deadstock.

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

Try to locate the disposal site as far

possible from sensitive land uses such

as parks and businesses.

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	
residences and livestock areas. Regardless of how well deadstock s 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.	Jun .
pens and maternity pens ensure that diseases are not transmitted t	¹⁰ OPTION 2 – ACTION	A CAL
Juliel Vullielable allillats.	Use alternative disposal methods such as a deadstock collector service.	

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

			as possible from neighbouring	
BACKGROUND	WHAT CAN YOU DO?		properties to minimize odour concern	
Disposal sites should be chosen with regard for neighbouring	OPTION 1 - ACTION		and protect livestock health.	
residences and other sensitive areas such as parkland, industrial land, highways, community or institutional use. Regardless of how well deadstock is managed or how promptly, there may be occa- sional unpleasant odours or sights. Distance, if available, is usually	Relocate sites for deadstock collection, composting, and incineration far enough away from sensitive land uses to achieve a 4 rating as described in the worksheet.			
the best solution.	Cease using disposal methods that do not meet setbacks to sensitive land.			
	OPTION 2 – ACTION	Brent in	The second s	
	Use alternative disposal methods such as a deadstock collector service.	-	A STREET	
		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.	Create an Action Plan for reference in the event of an emergency. 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 Reducing the Risk of Fire on Your Farm, Publication 837.

BURIAL

9–7. Distance from burial pit to nearest well

BACKGROUND	WHAT CAN YOU DO?	and the second s
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.	It is essential to choose a site that allows for proper decomposition and reduces the

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 drainage	OPTION 1 – ACTION (PLANNING)
tile, and then be discharged into surface water. This is both a poten- tial biosecurity risk and a source of contamination.	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.



risk of surface water and groundwater

contamination

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

better understand

for unused wells.

its construction, risk

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

BACKGROUND	WHAT CAN YOU DO?	
Burial of deadstock near surface water can increase the risk that it will	OPTION 1 – ACTION (PLANNING)	
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 ti inle
Adequate soil cover is necessary to reduce the risks of	OPTION 1 – ACTION	of co
scavenging and disease transmission.	Dig a test pit in area of future burial site to verify:	surt
The soil microbes responsible for decomposition are most	• there is more than 0.9 m (3 ft) of soil cover over bedrock or aquifer	_
effective in soils that are not too dry or too wet.	• it is not located on organic soil, sandy, sandy loam, or loamy sand soil.	
An adequate separation distance between the bottom of the burial pit and the aquifer is needed to ensure that any leachate is prop- erly managed by the soil organisms.	Verify Conservation Authority flood mapping to ensure selected area for burial is not prone to flooding.	

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

BACKGROUND	WHAT CAN YO
The greater the contact between the surface of the deadstock and the	OPTION 1 - AG
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 sever and do not dis

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CTION

ral burial pit locations, separated by more than 60 m (197 ft), spose of any more than 2,500 kg (5,500 lb) in any one burial pit.



OFA

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.



he flow-path distance from a surface t to a burial pit increases, the risk ontaminated overland flow reaching ace 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.	0.

COMPOSTING

9-13. Distance from composting site to nearest well

WHAT CAN YOU DO?

There may be occasional leachate from composting sites, and it is important to keep this water away from sources of drinking water.

Do not allow leachate to accumulate near water wells.

BEST MANAGEMENT PRACTICES

BACKGROUND



To learn more about composting, see pages 50–70 in this BMP publication.

OPTION 1 – ACTION

Relocate the composting site away from the well.

Decommission the previous site if necessary by removing the composting material. If the material is fully composted, it could be land-applied.

Add substrate to the existing pile to reduce the risk of leaching while the relocated composting site is being completed.

OPTION 2 – ACTION

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 Ontario Water Resources Act.

OPTION 3 – ACTION

Regularly test the well water for bacterial contamination. Take immediate action if it tests positive.



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



Locate compost piles away and downhill from wells.



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

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 drainage tile, and then be discharged into surface water. This is both a potential biosecurity risk and source of contamination.	OPTION 1 – ACTION
	Relocate the composting site more that 10 m (33 ft) away from drainage tile – the more separation, the better.
	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.

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	
that rainfall or spring flooding events will negatively affect de- composition.	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	
Excess water may decrease the temperatures inside the pile that are required for proper decomposition.	results in a rating of 3 or higher. Decommission the previous site if necessary by removing the composed material. If the material is fully composted, it could be land-applied or placed into the manure storage.	
Deadstock composted too close to surface water or tile inlets increase the risk of surface water contamination.		The flow path from a composting site

9-16. Management of compost pile

BACKGROUND

You can think of composting like a recipe. Appropriate quantities, mixing and management of the deadstock and substrate will ensure successful composting. Consult the BMP booklet Deadstock Disposal for technical information on composting. See pages 50–70. WHAT CAN YOU DO?

OPTION 1 – ACTION

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.

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.

Note: 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 scavengers out. A roof or tarp over a compost site will divert clean water, preventing it from mixing with compost and producing runoff.



to surface water or tile inlet should

exceed 75 m (250 ft).

A roofed compost site will divert clean water from mixing with compost and producing runoff.

9-17. Composting site soil conditions

BACKGROUND	WHAT CAN YOU DO?	Auna
The soil under the compost pile absorbs nutrients and acts as a 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	OPTION 1 – ACTION	
	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 of the base can be absorbed with additional substrate.	OPTION 2 – ACTION	If the
	Construct an impervious base (e.g. concrete, asphalt) for the composting site.	concre



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?	A Register of the second secon
Properly composted material can be a valuable nutrient source for	OPTION 1 – ACTION	
cropland.	Land-apply completely composted material to cropland (not on pasture or land used to graze ruminants) that is owned or controlled by the farmer	
materials is a biosecurity risk to the farm, and encourages scavengers.	As with other nutrient sources, application rate should match agronomic requirements of the field crops.	
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 rumi- nants. If SRM is spread on pasture or grazing land, then do not allow ruminants access to these fields for at least five years.	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 com- posted material containing SRM from the farm of origin. Distribu- tion or sale of on-farm compost is also contrary to the Nutrient Management Act, 2003 (NMA) Disposal of Dead Farm Animals		Properly finished compost should not contain any recognizable parts of deadstock.
Kegulation.		

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	OPTION 1 – ACTION	
may deteriorate. Therefore it is important to have adequate sepa- ration distance between the vessel and a well to reduce the risk of	Close disposal sites located too close to well.	
contaminating well 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:	
BEST MANAGEMENT PRACTICES	• 76 m (250 ft) away from a drilled well	
Water Wells	 150 m (500 ft) from a bored, dug or sand point well 250 m (820 ft) from a municipal well. 	Disposal vessels are scavenger-proof, leakproof containers into which dead-
If you way about how works, an guard wel see this B	nt to learn more v your well d how to safe- l water quality, MP publication.	stock is placed to decompose naturally.

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, it may	OPTION 1 – ACTION
deteriorate. Therefore it is important to have adequate separation distance between the vessel and field drainage tile to reduce the risk	Close disposal sites that are not situated properly.
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

	of in an area prone to hooding		To reduce the risk of contaminants flowing into	
	BACKGROUND		WHAT CAN YOU DO?	the tile and reaching surface water, maintain an
	Disposal vessels buried near surface water can increase the risk that		OPTION 1 – ACTION	m (49 ft) – between the disposal vessel and field
	 the vessel will heave out of the ground during rainfall or spring flood- ing events. Deadstock vessels too close to surface water or tile inlets increase the risk that surface water will be contaminated. Water that enters the disposal vessel will greatly reduce or even prevent decomposition of the deadstock. Successful decomposition within a disposal vessel relies on the air flow through the vent, and the flies and insect populations within the vessel. 	Close disposal sites that are not situated properly.	drainage tile.	
		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.		
		OPTION 2 – ACTION		
		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.	
		BEST MANAGEMENT PRACTICES		and the second s
		and the second se		



For more information about proper design, use and management of disposal vessels, see pages 75–83 in this BMP 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.

9-22. Design of disposal vessel

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osing a disposal ger usable or

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.	OPTION 1 – ACTION	
	Replace the incinerator with a unit that meets the requirements of the Verification Certificate from ETV Canada. Also:	
An incinerator that is operated improperly or otherwise malfunctioning can result in odour and smoke complaints from neighbouring properties.	 keep records of the temperatures in the combustion chambers at all times during incineration perform regular maintenance on the incinerator according to the manufacturer's specifications 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 only burn deadstock in the incinerator. 	
Improper operating temperatures can decrease the efficiency of the equipment, using additional fuel and energy to incinerate the deadstock.		
Maintaining the incinerator according to the manufacturer's recommendations can extend the life of the equipment.	Deadstock Disposal	
To learn more about		

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

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