

LIVESTOCK PREDATION PREVENTION PROJECT (LPPP)

DEADSTOCK COMPOSTING PENS TO REDUCE PREDATOR INTERACTIONS

As tested by Manitoba producers cooperating with the Manitoba Livestock Predation Prevention Pilot Project



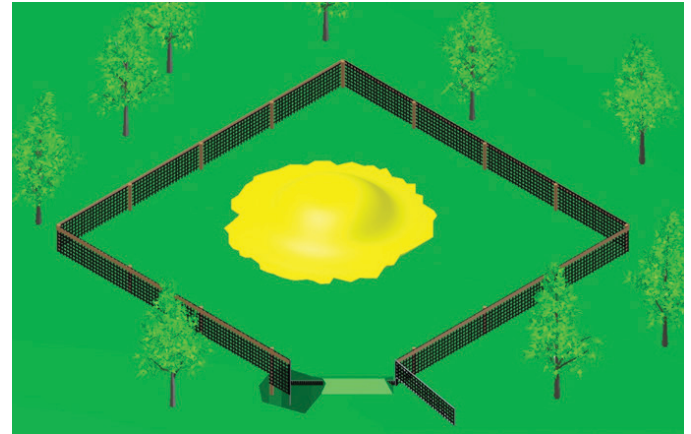
mbbeef.ca | 204-772-4542

Livestock producers who are concerned about coyotes, wolves, or bears attacking their livestock may want to consider a deadstock composting pen which is intended to limit food sources for predators close to their livestock operation. Deadstock pen testing was completed on 14 Manitoba farms during the years of 2021-2023. Results indicate that the composting pens are very effective at stopping predators from obtaining scavenged food from mortalities.

Background:

If deadstock is not secured from access by wild predators, they provide an abundance of nutrition typically with less effort required by the predator to obtain it than hunting wild prey. When a wild predator accesses a livestock mortality as a food source, it encourages them to revisit and spend more time in the area, increasing the vulnerability of your livestock; it can also bolster survival of their young.

Deadstock composting pens serve many different needs such as reducing the transfer of pathogens to other animals in the group. They also reduce possible movement by predators of infected body parts and the transfer of pathogens to other farms. They discourage predator traffic to your farm through depriving predators of meals. If a predator travels through your farm but does not find an easy meal, they are less likely to return. Farms where coyotes and foxes control small rodents and which don't normally have large animal mortalities are less likely to be



invaded by larger, stronger predators as larger predators usually prefer larger meals. Manitoba's Livestock Manure and Mortalities Management Regulation specifies that livestock mortalities can only be disposed of in only four ways: burial, burning, composting, or rendering.

Composting Pen Statistics:

1. Tested on 14 commercial Manitoba farms.
2. 11 beef farms, 2 sheep farms.
3. Average herd/flock serviced by pen: 373 head.
4. 78% felt there was minimal or no smell from the composting.
5. 60% of producers used straw, while remainder used bullrushes or manure pack.
6. 11 producers had no predator invasions.
7. Predator invasions were primarily bears or coyotes.
8. 57% believed that the pens saved livestock from predation.
9. 82% would rebuild the pen if it was damaged or destroyed.
10. 91% would recommend other producers build a pen for themselves.



LIVESTOCK PREDATION PREVENTION PROJECT (LPPP)

DEADSTOCK COMPOSTING PENS TO REDUCE PREDATOR INTERACTIONS

As tested by Manitoba producers cooperating with the Manitoba Livestock Predation Prevention Pilot Project



mbbeef.ca | 204-772-4542

Deadstock composting pens for predator reduction

Predators: Wolves, coyotes, cougars, bears, avian scavengers such as ravens, crows, magpies, vultures, and eagles.

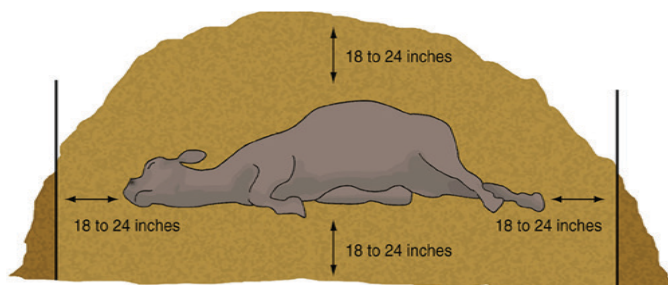
Livestock: All species of livestock mortalities, and could include afterbirth or any compostable material.

Pilot Project Costs of building a 64 x 64 foot deadstock composting pen (2021) Materials only

Item	Cost
5 foot tall chain link	\$970
7-foot posts (21)	\$130
8-foot posts (6)	\$78
Wood rails (16)	\$257
Single wire, insulators	\$100
Gate (custom built)	\$385
Concrete threshold	\$485
Misc. staples/spikes	\$100
Total without labor	\$2,505.00

Design of Pen:

1. Pen designed as 64 x 64 feet square with a 16-foot swinging gate which is predator resistant. The pen is about 4,000 square feet to accommodate occasional tractor traffic, and enough room to turn around a tractor to manage the compost pile.
2. Composting requires a covered and insulated zone where the mortality can warm up and start composting. The coverage should be some form of crop residue, cereal crop straw, wild hay, bullrushes, or sawdust which are all valid mediums to support composting. The residue is required to provide a carbon source to support warm temperature sustained decomposition.
3. Crop residue needs to insulate the mortality from the ground, and protect the mortality from birds scavenging from above. Open mortalities create smell, and invite predators who observe circling scavenger birds.
4. Crop residue needs are minimal after the first couple of composting processes, as initial straw and compost are ideal to be turned and incorporate new mortalities. Warm compost is an ideal starter for subsequent mortalities. The pens should not be cleaned bare to the ground as this interrupts many desirable composting processes. Adding to an existing mound is ideal to keep the process working and it sheds moisture better.
5. Wire used in pilot project: Galvanized chain link fencing, 50 inches tall or taller. Chain link is to be buried into a trench cut around perimeter of the fence and to be buried at least 6 inches deep. Chain link needs to be supported from above by either a treated wood rail, or chain link top rail pipe. This project found that treated rails are stronger when the chain link is stapled securely to a wood rail, rather than using the factory supplied pipe railing.
6. Post spacing should be no further than 12 feet apart. 7- or 8-foot posts should be used to provide extra height to support a top separate high tensile hot wire. It is also advantageous to add height and scare climbing predators like bears.
7. Gates require a solid threshold under the entire length of the gate. The project used a 17-foot-long custom steel pipe curb, with hole pockets at each end for steel gate posts with tight spacing to the gate.
8. Gate is a rectangular gate 5 feet tall and 16 feet long with tight corners and 2-inch square mesh, so no part of the gate can be passed through or around.
9. Composting areas should always be located on a hill, where flooding does not occur, and it should be away from property lines, wells or watercourses.



Composting pile with residue thickness surrounding the mortality.

LIVESTOCK PREDATION PREVENTION PROJECT (LPPP)

DEADSTOCK COMPOSTING PENS TO REDUCE PREDATOR INTERACTIONS

As tested by Manitoba producers cooperating with the Manitoba Livestock Predation Prevention Pilot Project



mbbeef.ca | 204-772-4542



Pilot project compost pen ready for use



Tight fitting gate with chain link fence and high tensile top wire.

Note: Hi-Tensile Apron wire was tested as an alternative to chain link.

1. The first 11 pens built were built with chain link fencing material, and galvanized tubing top bar. This is typical of industrial work compounds and similar to baseball backstop netting. Chain link is not tightly tensioned and requires the galvanized pipe and wire ties to hold up the weight of the wire and anything that weighs down the wire. At least two of the pens were damaged in the first year of use by black bears climbing and trying to traverse the chain link. Once the chain link is stretched it gets difficult to return to full height. If there is any likelihood of bears climbing the top then hi tensile wire should be electrified with a solar electric fence. An electric shock can change the plans of a bear to traverse the fences.



Example fence using Stay Tuff 868 apron wire hi-tensile fence. Note 22 inch apron on the ground.

2. The final three pens were built with Stay Tuff 868 Fixed Knot Class three hi-tensile page wire with a 22 inch horizontal apron and 71 inch vertical fence. As this wire is a hi-tensile product, it is highly tensioned and does not require top bar. A top bar of heavy wood rails would be an acceptable improvement but not mandatory.
3. Apron wire is a good replacement for chain link, as the apron discourages dig under activities of coyotes and wolves.
4. Stay Tuff apron wire is currently not available in Canada and was imported from the US and picked up at North Country Mercantile in Minot North Dakota. Advance ordering is necessary and a two month advance order was required in 2023. Rolls are available in 330 foot long rolls and one roll cost \$1,329 Canadian dollars including Canadian Border Services charging GST and PST. Import and border crossing was very simple and only involved declaring fencing supplies and paying the taxes.

LIVESTOCK PREDATION PREVENTION PROJECT (LPPP)

DEADSTOCK COMPOSTING PENS TO REDUCE PREDATOR INTERACTIONS

As tested by Manitoba producers cooperating with the Manitoba Livestock Predation Prevention Pilot Project



mbbeef.ca | 204-772-4542

5. Apron wire will likely be a superior predator deterrent to all other options, as it is specifically designed for predators. However, the challenge of ordering less than pallet amounts of apron wire could be problematic or not possible. Additionally, travelling to the US to purchase product also adds cost. If apron wire is unavailable or too complicated to acquire, heavy hi-tensile 12 gauge, 80 inch, non-apron wire can be used. However you will have to find small hole wire, to exclude coyote which can fit through quite small holes. It should be buried in soil up to 12 inches deep to reduce dig under risk. Bending of standard fixed knot page wire to accomplish a home-made apron could be attempted, but would be a challenge due to the stiffness of the wire.

Project Participant Feedback

"The compost pen is easy to use and effective... Ideally, we would have built in a more open area where we can remove snow."

– Crane River Manitoba beef producer

"Building a pen that resists predators' urge to dig under could be accomplished by laying a galvanized wire mesh apron placed on the ground around the outside of the pen reaching about 3 feet. This would be effective and not require burying the chain link into a trench. I had seen it in Minnesota and it is very effective"

– Teulon Manitoba sheep consultant

"No odor! We are close to an urban area and don't want to attract the attention of predators or people. The compost pen worked, and now we don't have the hassle of finding places to dispose of the occasional mortality."

– Brandon Manitoba beef producer/research farm

For more information on the Manitoba Livestock Predation Prevention Pilot Project and other Risk Mitigation Practices please visit <https://mbbeef.ca/>



MANITOBA BEEF PRODUCERS

220-530 Century St., Winnipeg, MB. R3H 0Y4

www.mbbeef.ca E info@mbbeef.ca P 204-772-4542 F 204-774-3264