Plans for the Mass Disposal of Dead Animals

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Votre gouvernement

Québec

MORTALITY MANAGEMENT

- Regulation respecting food (P-29, r. 1):
  - Incineration
  - Dismembering
  - Composting
  - Landfilling on the farm

*When there is a surplus, the farm producer may request authorization from the Minister to dispose of inedible meat by any other means of disposal or reclamation of residual materials that complies with the Environment Quality Act and its regulations.

DISPOSAL REQUIEMENTS FOR ASF

Hypotheses:

- 60% slaughter ratio
- Abortion 50% sows
- Slaughter:
  - Farm (piglets 6 kg and under)
  - Slaughterhouse
  - Mobile euthanasia unit (MEU)
- 22 weeks + sows

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275,712 tonnes

EXISTING DISPOSAL CAPACITY

Mortality management according to P-29, r.1:

- Incineration
- Dismembering
- Composting
- Landfilling on the farm
- LET

102,324 tonnes

COMPOSTING PILOT PROJECT

100% MAPAQ funding

Objectives:

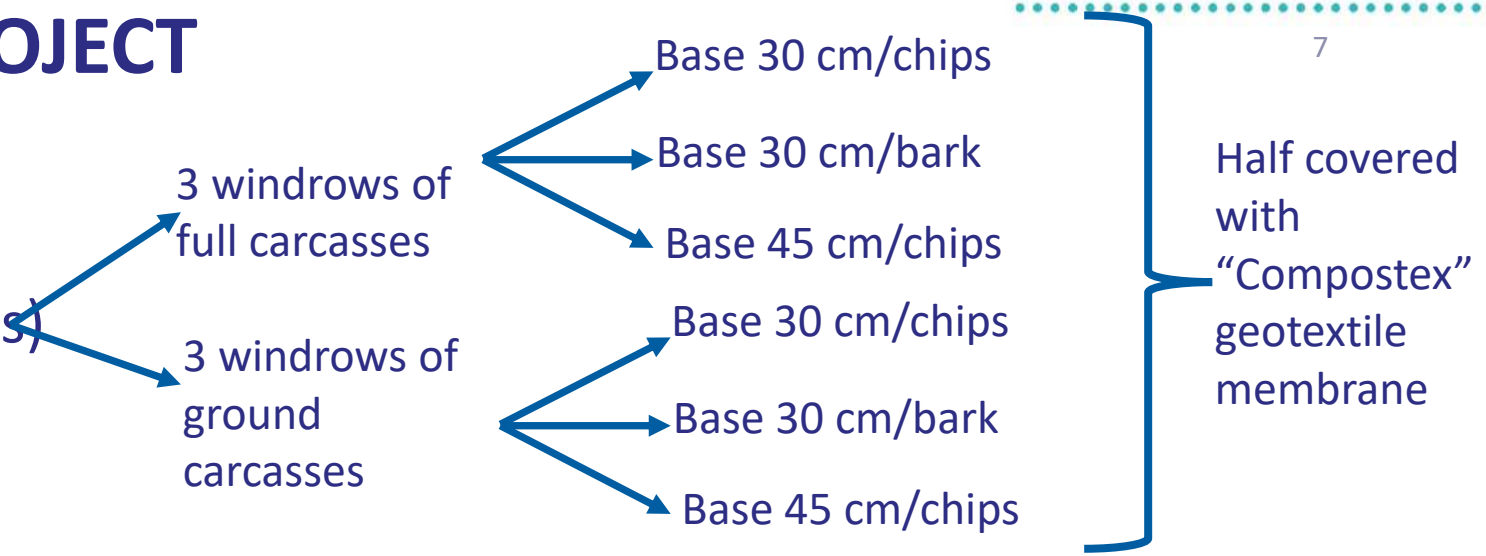
- CFIA: Temperatures
- MELCCFP: Environmental contaminants (air, leachate, odours)
- EQSP: Operation and cost
- MAPAQ: Identification of an additional disposal method

Project entrusted to Denis Potvin of IRDA

COMPOSTING PILOT PROJECT

Scope of project:

- 6 windrows (4 x 2 x 15 metres)
- 58 tonnes of carcasses

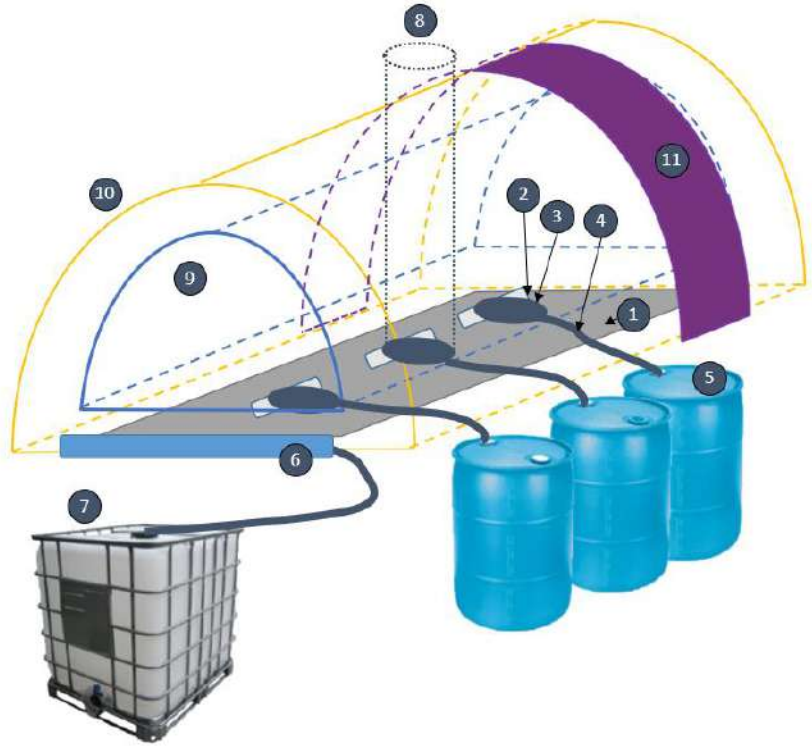


Variables tested:

- Body conditioning (full/ground)
- Windrow base thickness
- Structuring agents (chips/bark)
- Rain impact

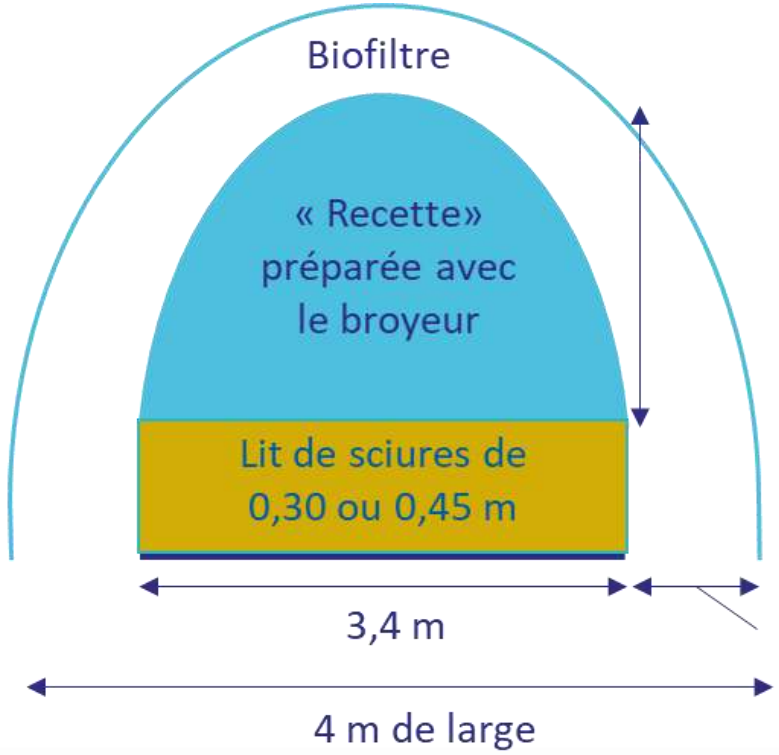
COMPOSTING PILOT PROJECT

Experimental setup



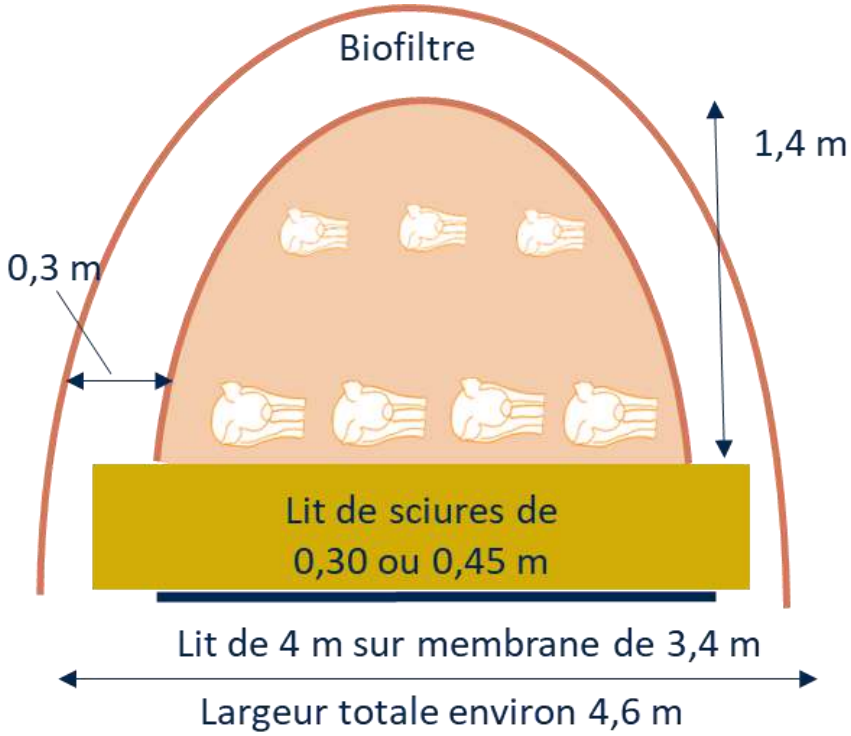
COMPOSTING PILOT PROJECT

Windrows of ground carcasses



COMPOSTING PILOT PROJECT

Windrows of full carcasses



COMPOSTING PILOT PROJECT

Results:

- Aerosols: Not detected
- Temperatures: Over 55°C for ground cadaver windrows
- Odours: 30 cm of biofilter is sufficient
- Lixiviat:
  - 30 cm base seems sufficient
  - Smaller volume for full-carcass windrows
- Turnaround:
  - After 12 weeks for ground carcass windrows
  - After 17 weeks for full carcass windrows
- Compost quality:
  - Pieces of bone in full carcass windrows
  - Good Quality compost
  - Significant reduction in E. coli levels
  - Similar agronomic qualities between conditions

COMPOSTING PILOT PROJECT

Results:

	Windrows of full carcasses	Windrows of ground carcasses
Advantages	- Less leachate generated - Lower equipment requirements	- Fewer structuring agents required (2.5x) - Less surface area required (2x) - Faster composting time - Low discharge
Disadvantages	- Need to place carcasses - Possibility of composting fewer carcasses on a given surface (2x) - Need for more structuring agents (2.5x) - Need to sieve bones	- Difficult to assess proportions of structuring agents/carcasses - Complex crusher cleaning - Limited availability of crushers

COMPOSTING PILOT PROJECT

Conclusion:

- Proven feasibility
- No major difference between substrates used
- Leachate present, but mitigation measures possible
- Agronomic quality of composts enables their use in farming
- 30 cm biofilter provides adequate odour management

IMPLEMENTING COMPOSTING IN AN EMERGENCY CONTEXT

Guidelines under consultation:

- On-farm composting
- Centralized on-site composting

OPERATIONAL PLAN FOR THE MASS DISPOSAL OF ANIMAL CARCASSES IN EMERGENCY SITUATIONS

- Mandate awarded to Stantec Inc.
- Mandate to operate:
  - Slaughter
  - Transport of carcasses
  - Disposal
- Project completed in December 2024

OPERATIONAL PLAN FOR THE MASS DISPOSAL OF ANIMAL CARCASSES IN EMERGENCY SITUATIONS

Methodology

OPERATIONAL PLAN FOR THE MASS DISPOSAL OF ANIMAL CARCASSES IN EMERGENCY SITUATIONS

Centralized composting site:

- Geomatic research
- Drafting of a standard plan and specifications :
  - Material reception area
  - Windrow location
  - Road location
- Capacity:
  - 1,500 tonnes/week
  - 2 hectares/week
- Limiting factors:
  - Availability of horizontal crusher
  - Availability of structuring agents

OPERATIONAL PLAN FOR THE MASS DISPOSAL OF ANIMAL CARCASSES IN EMERGENCY SITUATIONS

Centralized landfill sites:

- Geomatic research
- Drafting of a standard plan and specifications :
  - Material reception area
  - Cell location
  - Location of leachate treatment units
- Limiting factors:
  - Leachate treatment
  - Location identification

CONCLUSION

- New mass disposal method available: Composting in outdoor windrows
- The Operational Plan for the Mass Disposal of Animal Carcasses in the Event of Emergency Measures has made it possible to:
  - Quantify disposal needs by region.
  - Identify additional disposal sites that meet geomatic criteria.
  - Draw up plans and specifications for centralized disposal sites to be used in the event of the introduction of African Swine Fever.
  - Specify the steps for implementing the Operational Plan.

NEXT STEPS

- Analyze the Operational Plan produced by Stantec:
  - Work on the limiting elements identified.
- Finalize the “Guidelines for Composting Livestock in Emergency Situations”.
- Raise awareness among agronomists.