# Dead Animal Compost Design

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# Key Design Items

- Sizing
- Siting
- Construction and Materials
- Other Key Items



# Board of Animal Health Recommendations

- Sized to handle daily mortalities through 2 heat cycles



# Minimum # of Bins

- 2 primary bins
- 1 secondary bin
- 1 storage bin
- All the same size

## Sizing of Bins

- Big enough to contain daily carcasses and bulking material through heat cycles
- Larger carcasses more time in bins
- Number of bins to facilitate turning and composting time

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## Steps to Bin Sizing

- Step 1. Determine average daily weight of dead animals to be composted.
- Step 2. Determine total volume of bins needed based on size of carcasses
- Step 3. Determine number of bins and subsequent width, length, and height of bins

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## Sizing Worksheet

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## Step 1. Estimate Mortalities

- Use farm records or Table on MDA publication (page 12) to estimate daily death loss.

Animal Weight x
Animal Number x
% annual death loss ÷ 365

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## Step 1. Estimate Mortalities

- Remember to include all categories of animals on farm in death loss calculations. (Cows, calves, heifers, etc.)



## Step 2. Total Bin Volume

- Determine total bin volume required using sizing factors Table in MDA publication (page 13)
- Remember to sum all animal categories
- NOTE: Bin sizing factors are a function of animal weight so each weight category must be determined differently



## Step 2. Total Bin Volume

<u>Animal Category 1</u>
Daily death loss (lbs) x Carcass sizing factor
plus
<u>Animal Category 2</u>
Daily death loss (lbs) x Carcass sizing factor



## Step 3. Bin number and sizing

- Use total bin volume from worksheet 1 in worksheet 2
- Determine volume of bins using a 2 primary bin system. If more than 4000 cubic feet per bin, increase the number of primary bins

## Step 3. Bin number and sizing

- Determine number of bins
- Determine bin height and width
  - Use practical considerations such as bucket width and easy of materials handling requirements
- Bin height 5-8 feet
- Bin width 8-12 feet

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## Step 3 Bin number and sizing

- Determine approximate number of bins
- Determine bin height and width
- Divide total bin volume by bin height and bin width to determine bin length
- Use Common sense and “play around” till reasonable dimensions are determined

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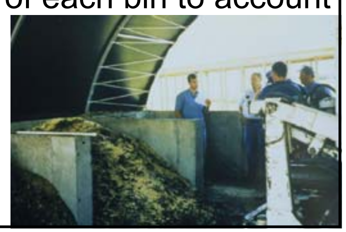
## Final Bin Number and Dimensions

- # Primary bins
- 1 secondary bin for every two primary bins
- 1 storage bin for every two primary bins
- Add 2-3 feet in length of each bin to account for slope.



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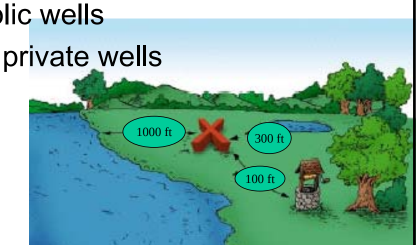
## Additional Siting Recomendations

- Easy access
- 1000 feet from DNR lakes
- 300 feet from other waters
- 1000 feet from public wells
- 100–200 feet from private wells
- Not in flood plains
- Not in public view
- Consider odors




Picture from Manitoba Conservation, Livestock Environment Program

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# Construction and Materials

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# Board of Animal Health Recommendations

- Impervious and weight bearing pad
- Roof or water shedding cover materials
- Rot resistant materials
  - Treated Lumber
  - Concrete

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# Construction and Materials

- Control leaching and runoff
  - Concrete pad recommended
  - Roof or water shedding media
- All weather and easy access for equipment
  - Concrete apron
- Concrete or treated lumber
- 2 primary, 1 secondary, 1 media storage and overflow

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## NRCS Plans and Specs

- Practice Standard #317 currently being revised
- Require concrete pad and concrete apron
- Standard drawings for concrete structure with roof is being prepared
- Cost estimate $7.00 to $25.00 per square foot

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## Federal CAFO Regs

- Requires Mortality Management Plan
- Allows composting

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## Questions?

- www.manure.coafes.umn.edu

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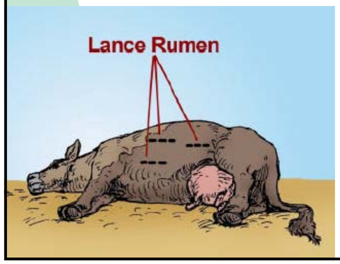
Lance Rumen