
## Cold Semi-arid Climates

- Environmental temperature and humidity *will* influence completion time and efficiency
- Practice is viable in climates such as the northern plains and mountain west
  - Agriculture Canada - Lethbridge, Alberta
  - Montana DOT as well as farms, ranches and research centers in the region
- Average times for large carcasses are 8+ months in static piles/bins
  - Some anecdotal faster times

## Case Study: Havre, MT

- MAES Northern Agricultural Research Center
  - avg. high/low for Dec & Jan is 28F/6F
  - spells below -20F and colder
  - avg. 24hr temp during dataset: 33 F
    (Feb 19th to April 16th; observations continue)
  - avg. annual precipitation: 11.5 inches

## Northern Ag Research Center
### Havre, MT

- Successful composting of windrowed feed lot manure with straw for almost two years.
  - Documented compost temps of 140 F, while ambient temp was -20 F
- Began mortality composting spring 2010
- Researchers
  - Julia Dafoe, Research Associate
  - Darrin Boss, Assistant Professor

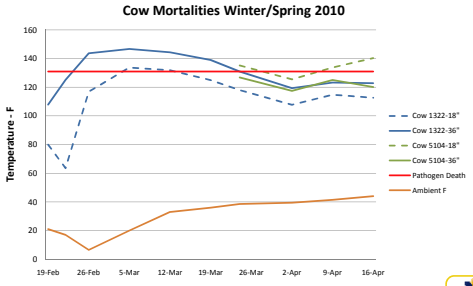
## Northern Ag Research Center
### Havre, MT

## Northern Ag Research Center
### Havre, MT

- Large square bale bunker
  - 18" sawdust base
  - mortality
  - 36" spoiled silage
  - 12" sawdust cap
  - Re-cap as needed

The archived presentation is available at:
http://www.extension.org/pages/Livestock_and_Poultry_Mortality_Composting

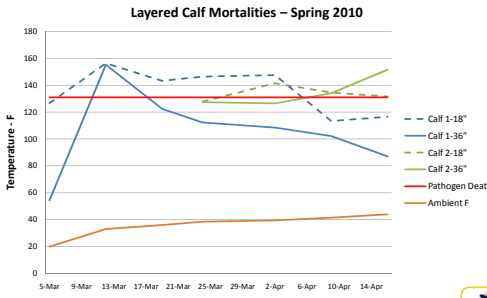
## Northern Ag Research Center
### Havre, MT




## Northern Ag Research Center
### Havre, MT

- Large and small square bale bunker
  - 18" sawdust base
  - calf mortality
  - 20" +/- spoiled silage
  - 2 more layers mortality & silage
  - 12" sawdust cap

## Northern Ag Research Center
### Havre, MT

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## Practical Tips

- Unfrozen carcasses will enhance initial heating
- Active material immediately around the carcass will enhance temperature rise and attainment
  - silage, manure solids, warm compost

## Practical Tips

- Initial carcass moisture will allow for composting of the carcass to begin
- Moisture in co-composting materials is beneficial
  - 30%-50% non-dried sawdust/shavings
  - 60%-70% in silage

## Practical Tips

- Extra cap material or insulation will help mitigate the influence of ambient temperature
- Additional moisture will be needed to finish compost after static phase
  (weeks or months later)

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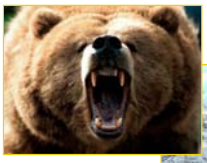
## Montana Scavengers



## Contacts:

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