Cornell Waste Management Institute

Managing Livestock Mortality & Butcher Waste ---You Can Compost WHAT?

Jean Bonhotal
jb29@cornell.edu
cwmi.css.cornell.edu

Northern Right Whale

You Can Compost Any Size Animal!

Situation

- Lack of Services
- SRM's-Parts That are Not Accepted
- Cost
- Access

Disposal Options

Alkaline Digestion

Rendering

Mass Burial

Incineration

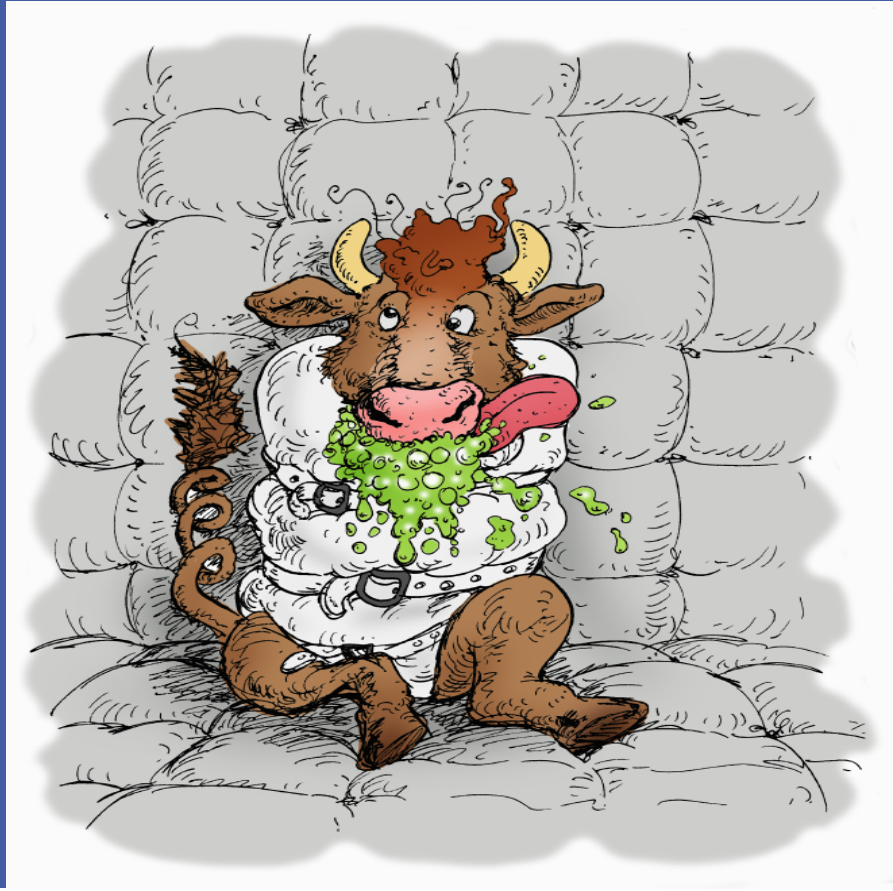
Landfill

Compost

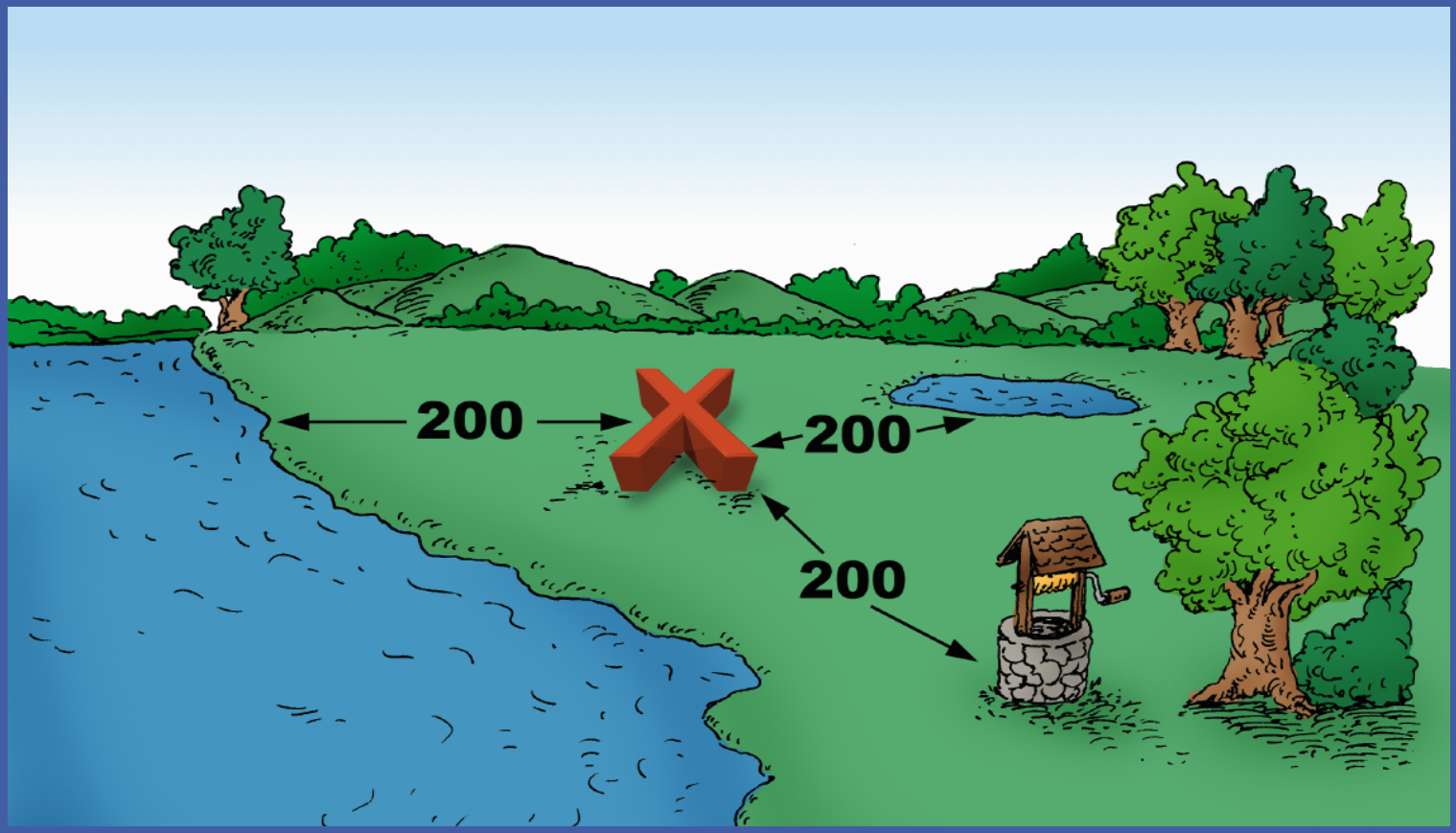
Risk

Animals exhibiting sign of neurological diseases before death should not be composted and should be reported to the USDA for autopsy and proper disposal.

We have no evidence that Prions such as the ones that cause Mad Cow Disease are killed in the compost process.



Site Selection



Well-drained, at least 200 ft from water courses, sinkholes, seasonal seeps or other landscape features that indicate the area is hydrologically sensitive.

Three-Bin Covered System

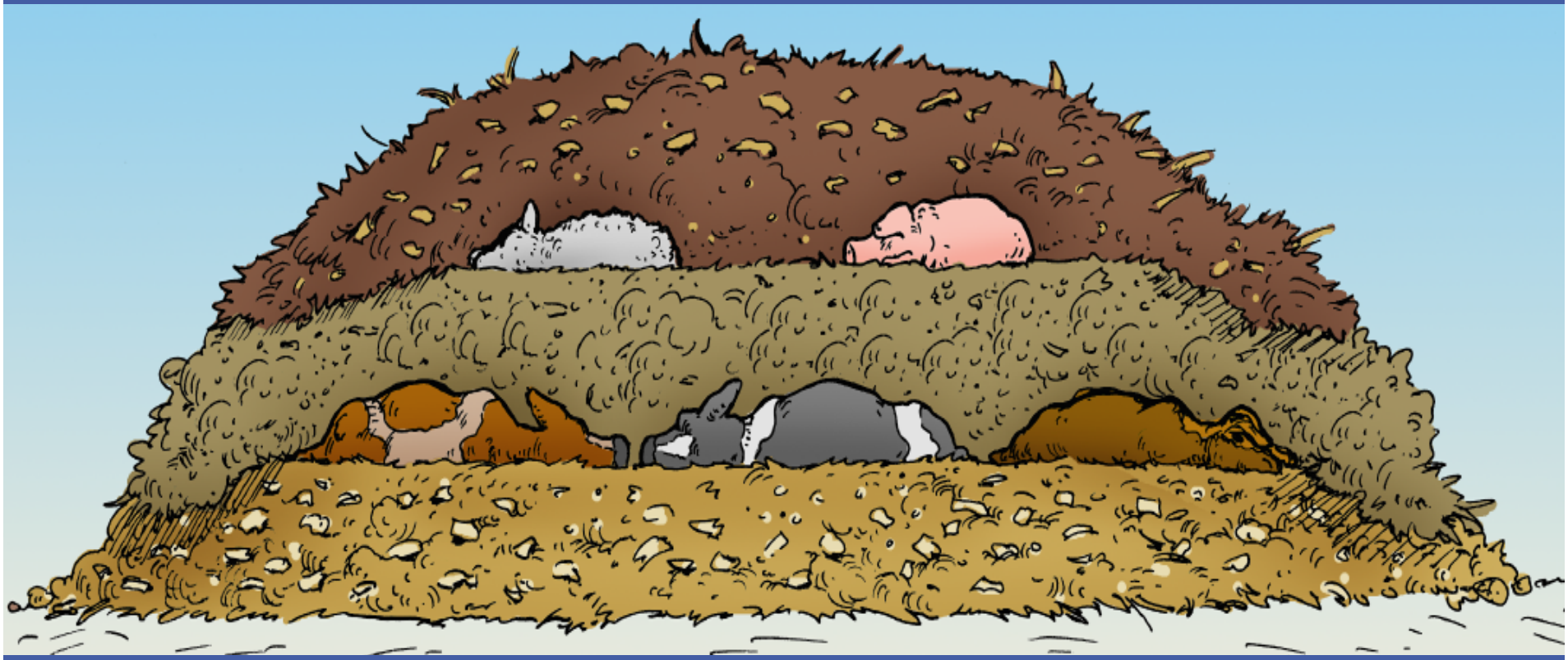
Concrete & Block

Carbon Sources

- Wood chips, Shavings, Sawdust
- Refused feed
- Spoiled Silage
- Chopped Cornstalk
- Nut Hulls
- Partially Composted Material
- Bedded Pack
- Straw/Hay
- Think about coarse, dry carbon sources in your area

Compost Bed

Recipe for Small Animals

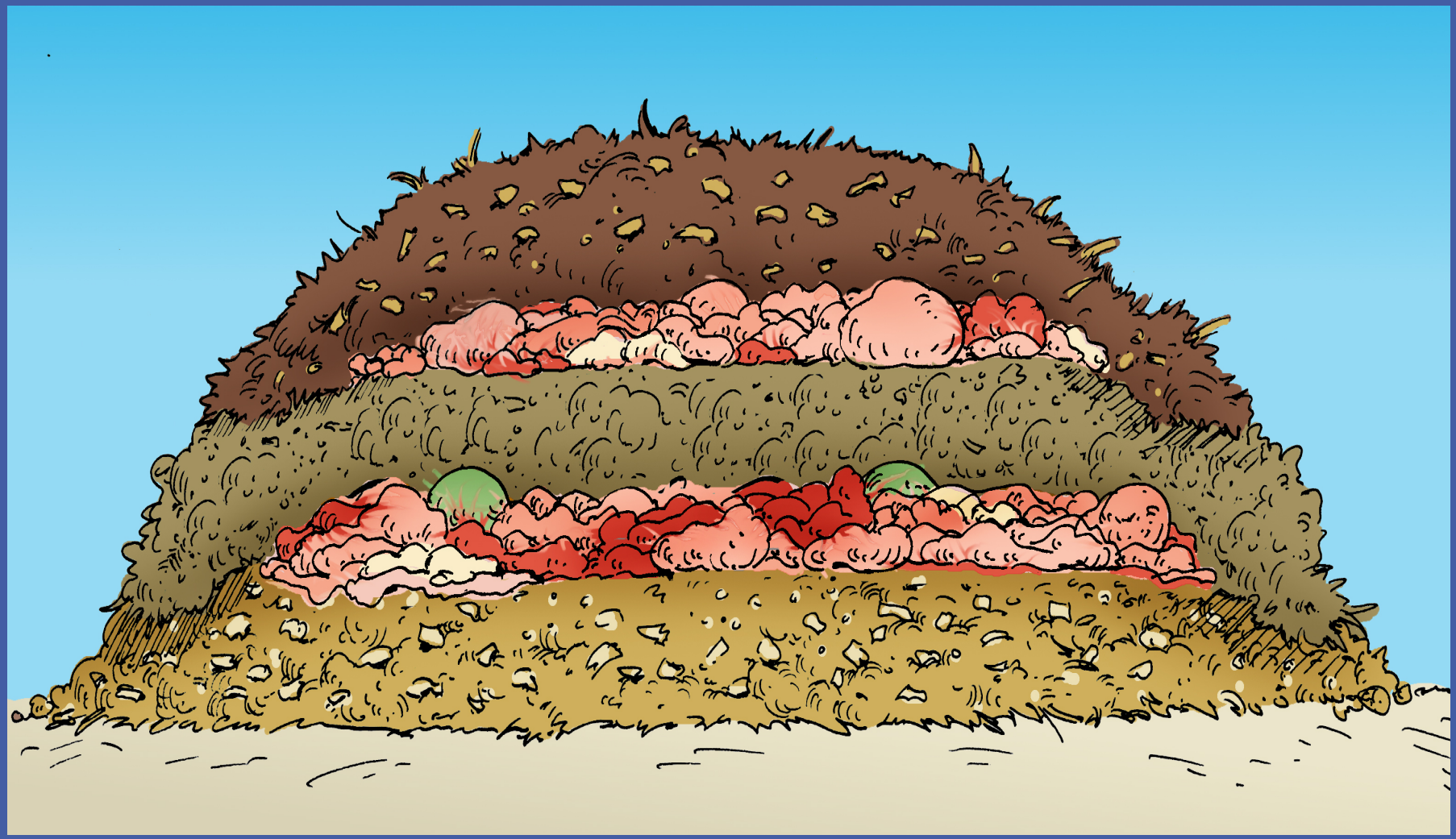


For young animals, layer mortalities with a minimum of 2 feet of co-composting material.

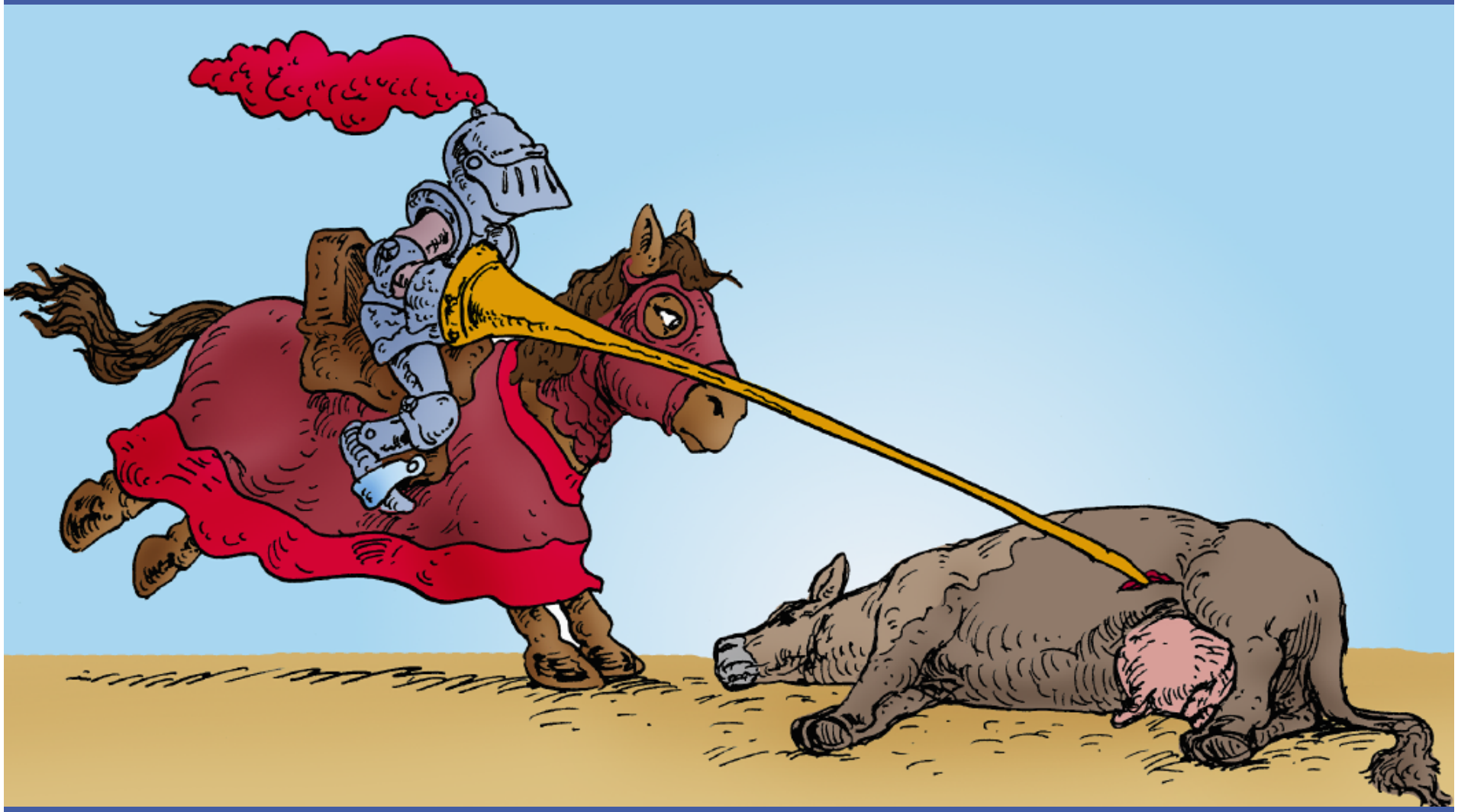
Layering Medium Sized Animals

Chunky Carbon Source and Meat Waste

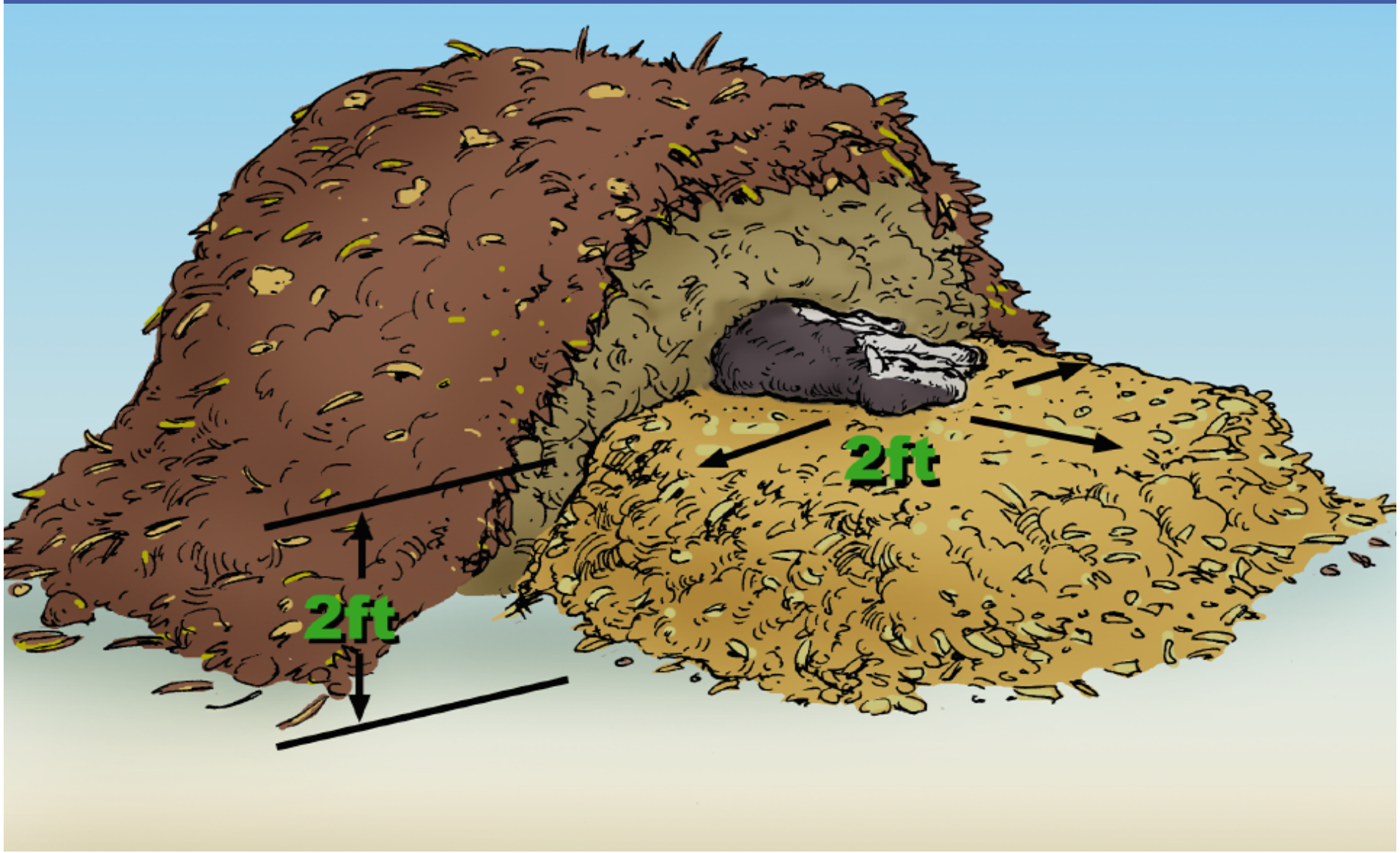
Butcher Residual



Lance Rumen

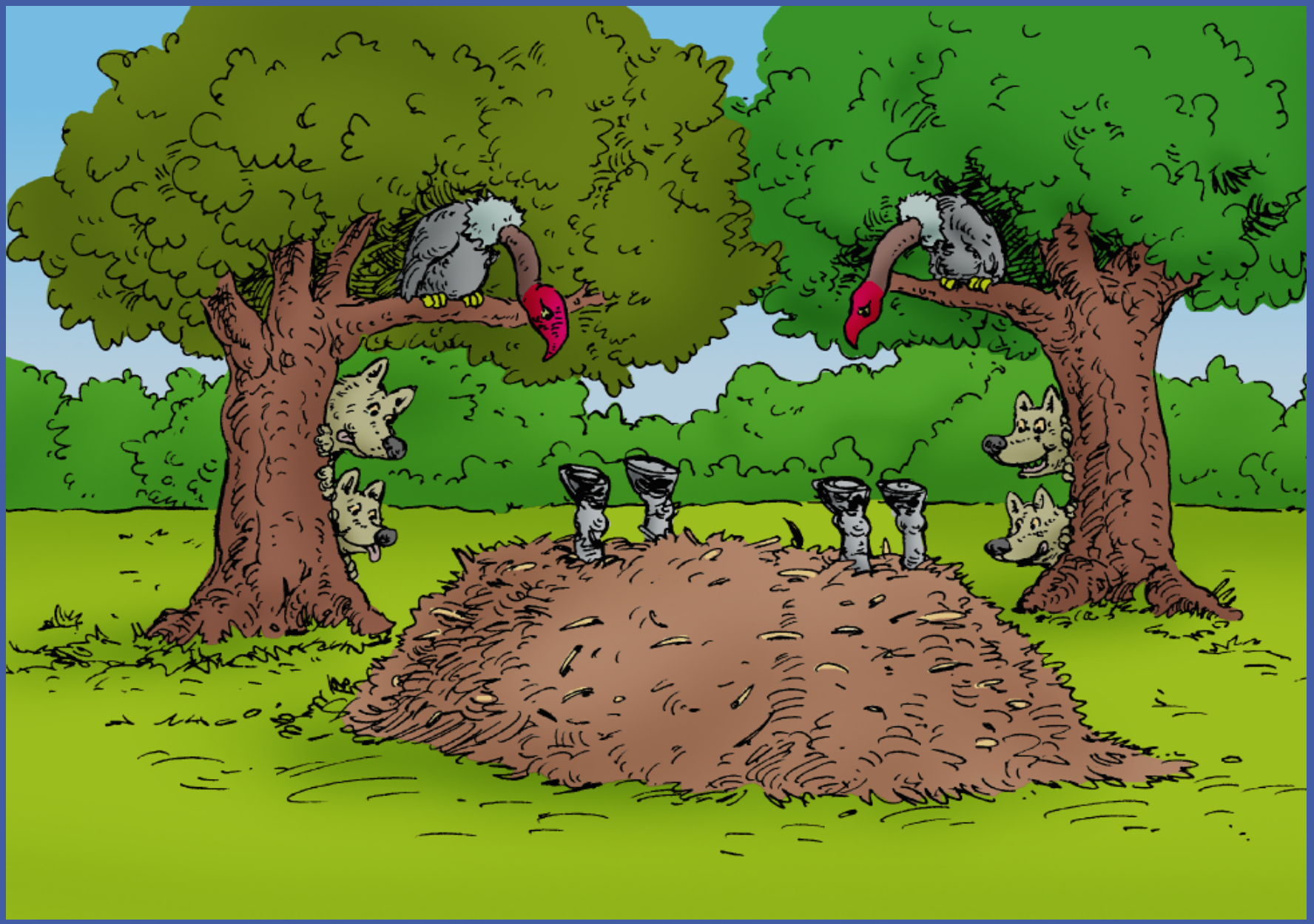


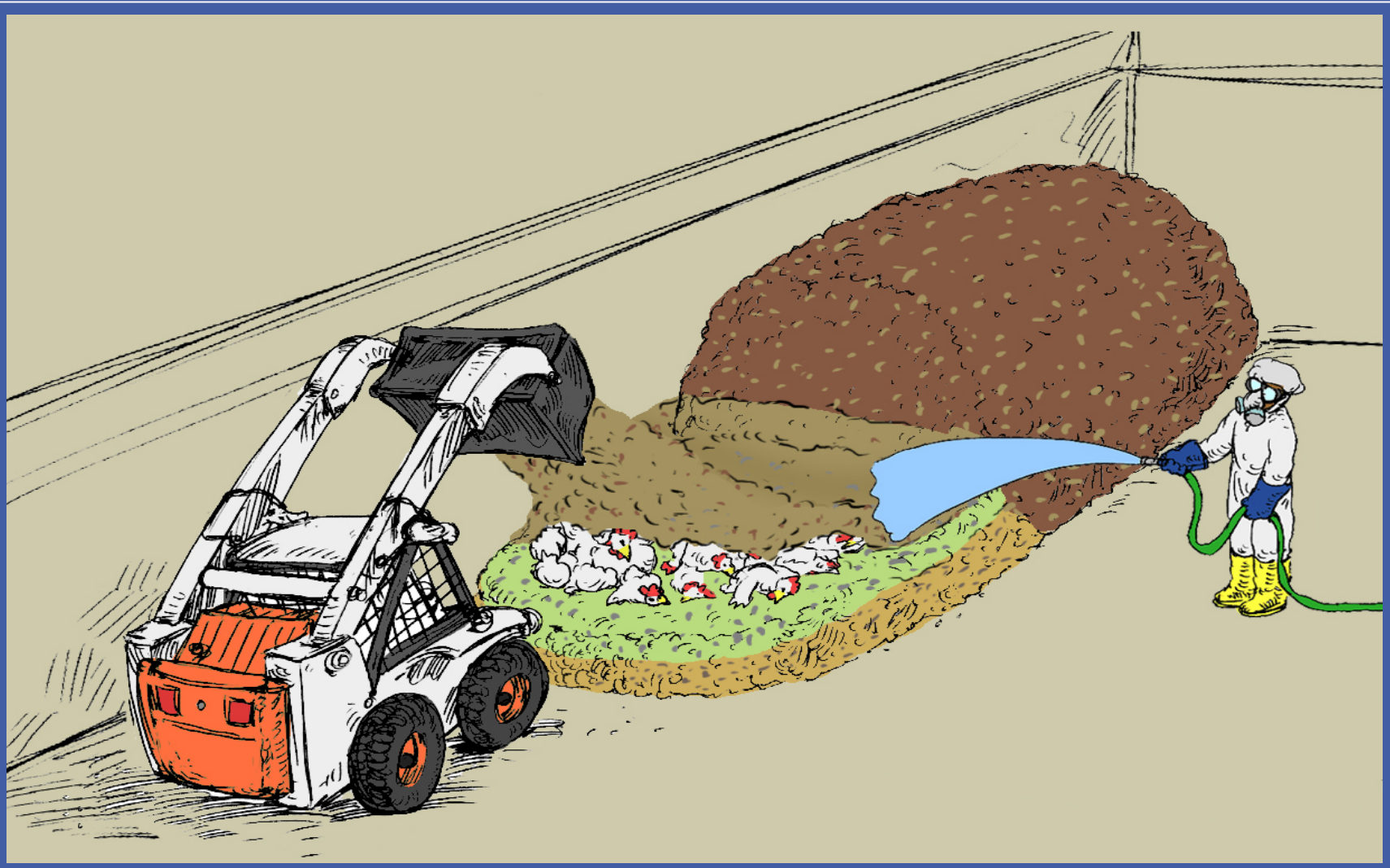
Recipe for Large Animal



Covering Carcass

Cover carcass with dry, high-carbon co-composting material, like old silage, sawdust, or dry stall bedding (some semi-solid manure will expedite the process).

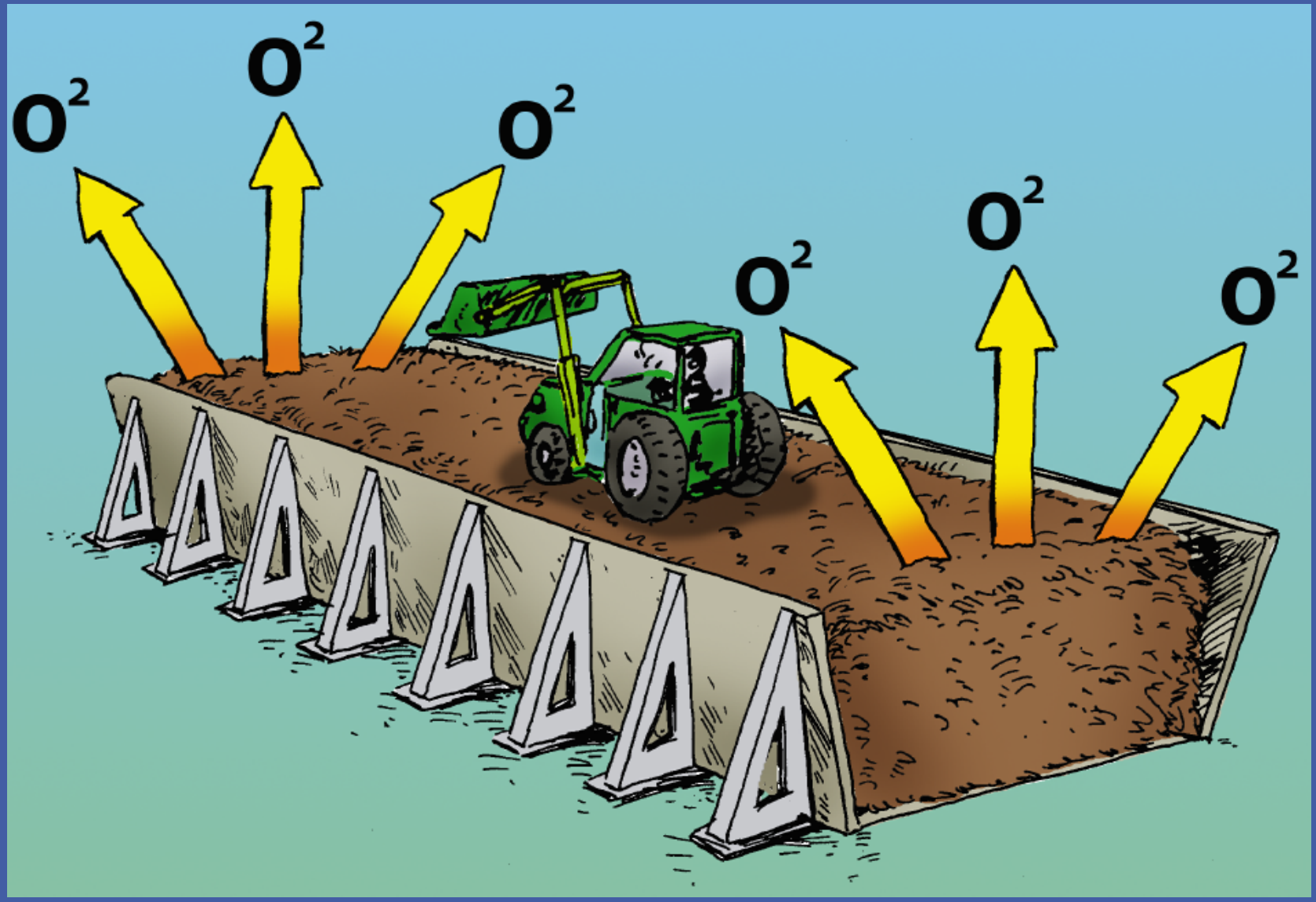




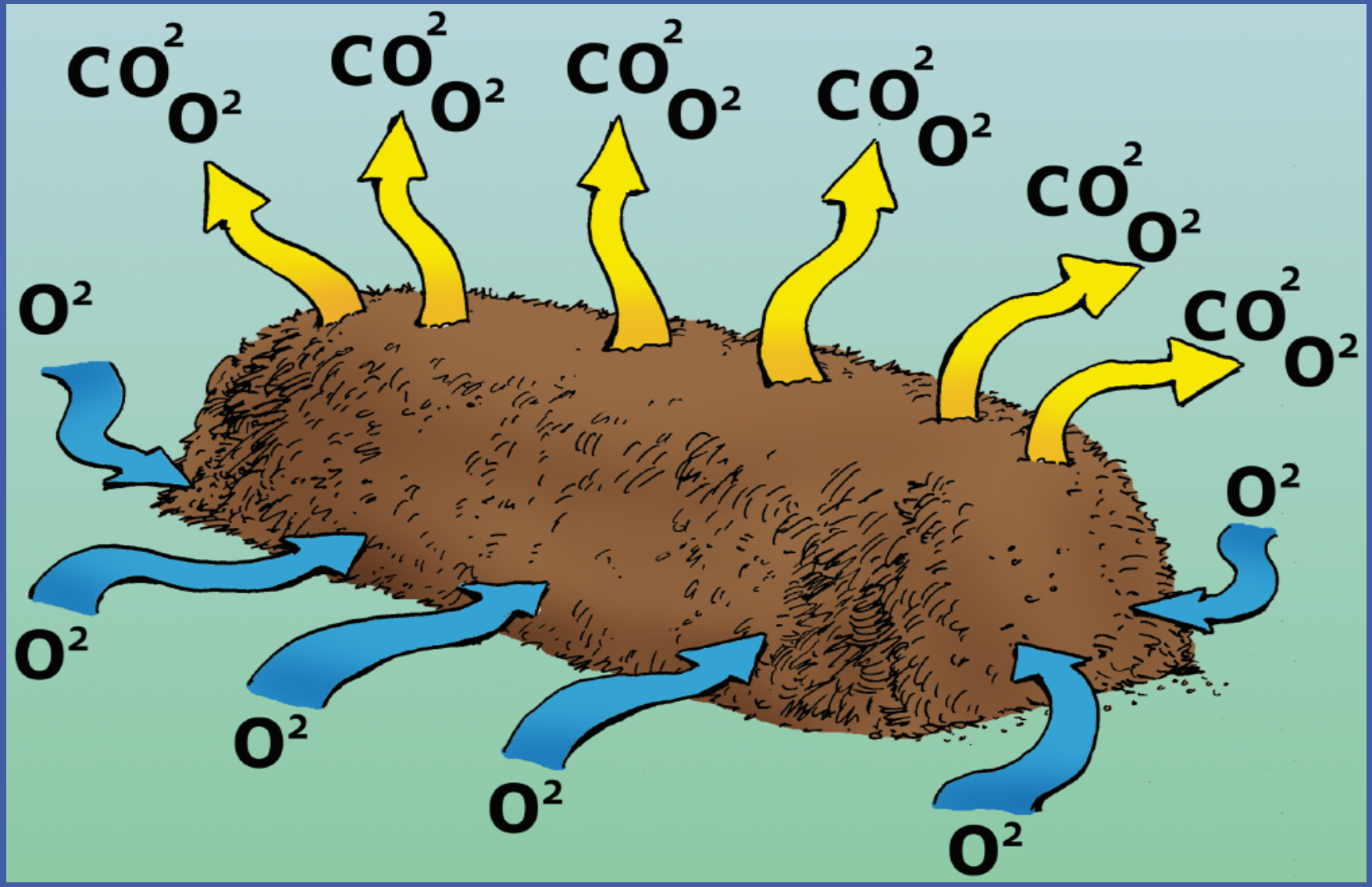
In Dry Climates, add Water during Pile Construction and shape piles for moisture control

Temperature 110-160 F

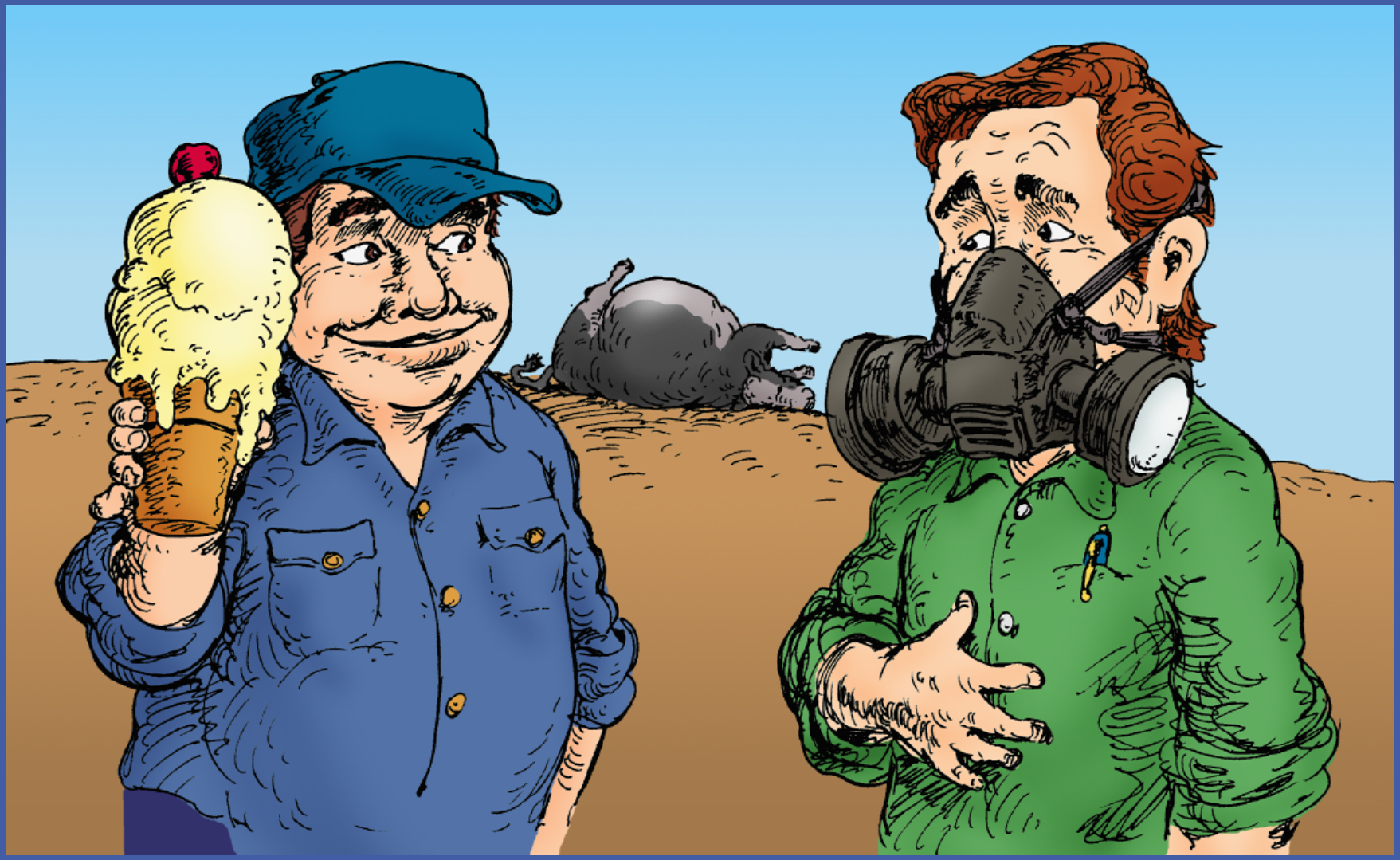
How Silage Is Made



Static Pile Aeration



Odor



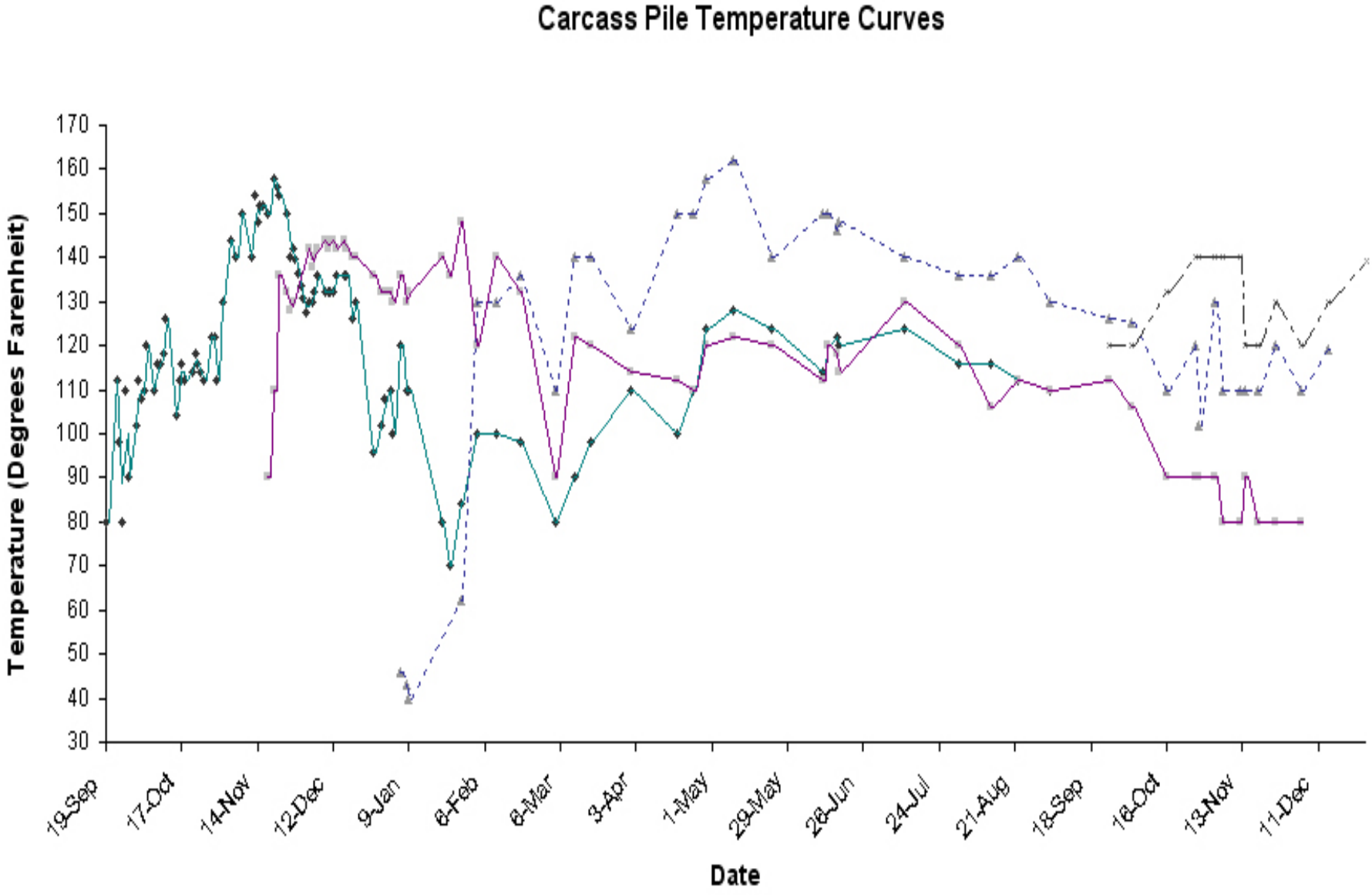
Time it takes

- Well stacked pile should heat up in 12-24 Hours.
  - **Month 1- cooked meat**
  - **Month 2-meat is digested**
  - **Month 3- clean bones**
  - **Mature compost 6-9 months**
- Frozen Animals placed in piles- Feb 2004 piles registered 40 F (in NYS)
- Late May-reached temperatures of 130 F

PROCESS

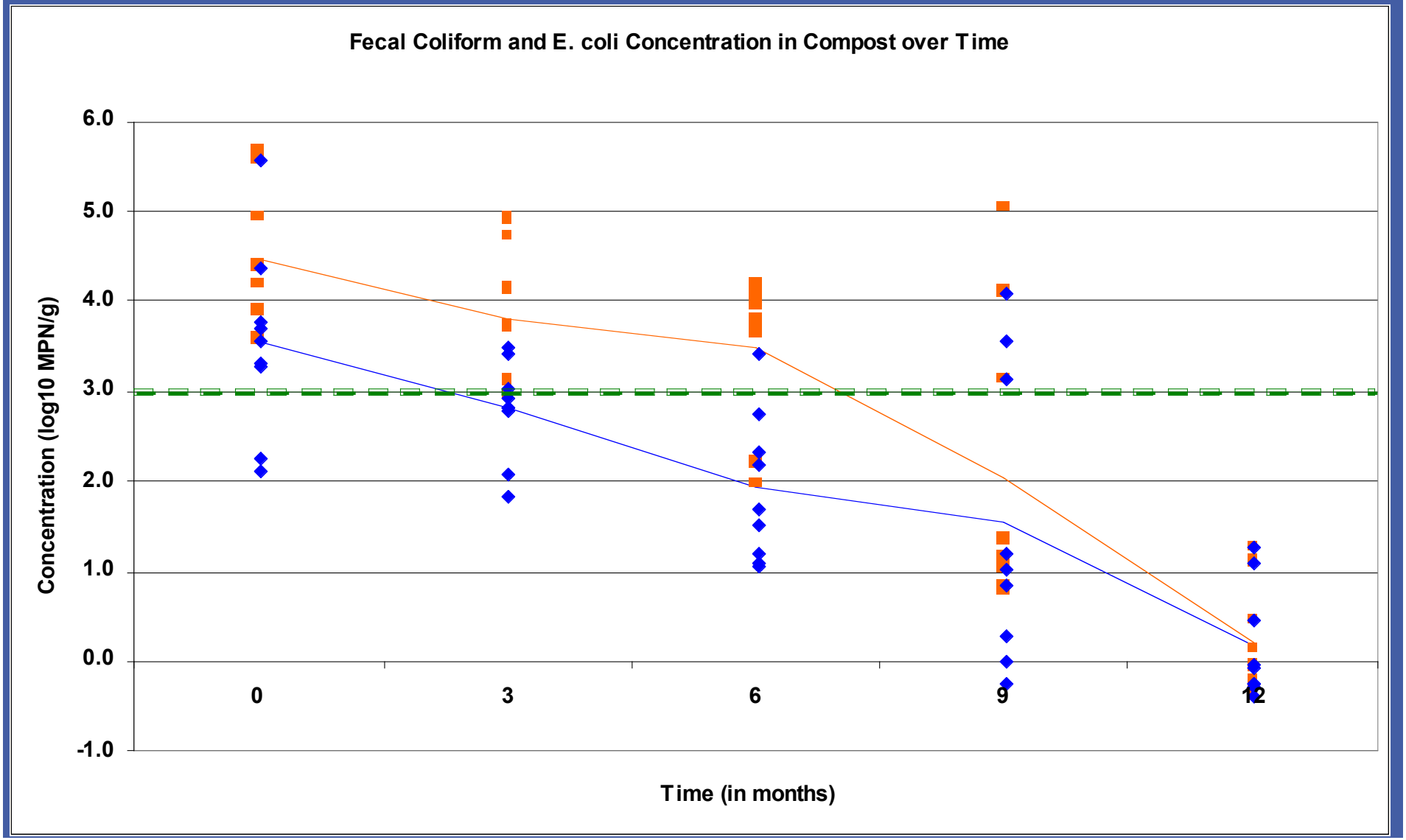
- Let set for 4-6 months.
- Turn only if desired after 3 months.
- Reuse bones as part of next base.

Cornell Waste Management Institute


Carcass Pile Temperature Curves
Temperature (Degrees Farenheit)
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
19-Sep
17-Oct
14-Nov
12-Dec
9-Jan
6-Feb
6-Mar
3-Apr
1-May
29-May
26-Jun
24-Jul
21-Aug
18-Sep
16-Oct
13-Nov
11-Dec
Date

Fecal coliforms and *E. coli* in Compost over Time

Fecal coliforms *E. coli*



Disposal of End Product

- Reuse as Base, don't reuse as top layer
- Remove large bones and Land spread
- Use on feed crops harvested above ground
- Spread on forest or non human food crops

Cautions

- Regulation/Policy
- Securing Carbon Source
- Reuse Carbon source for base
- Size of Pile
- Poor coverage
- Odor

Avian Influenza Outbreak-depop

Birds died within 5 Days of Onset

Building a Windrow

60,000 turkeys

Contact:

- Jean Bonhotal……jb29@cornell.edu
  607-255-1187
- Web…….http://cwmi.css.cornell.edu

Cornell Waste Management Institute
813 Bradfield Hall
Ithaca, NY 14847