RENDERING: THE GREENEST OPTION

A Comparison Of 3 Alternatives For Large Scale Processing of Meat and Meat By-Products

**GREENHOUSE GAS PRODUCED**

*per 1000 kg of meat and meat by-products processed*

- **200 kg GHG***
- **2500–4000 kg GHG***
- **60–500 kg GHG***

**END USES**

- **RENDERING**
  - Converts **99%** of meat & meat by-products into ingredients for animal feed, biofuel, fertilizer, industrial and consumer products
  - Recovered resources have a **HIGH ECONOMIC VALUE $$$$$**
  - Established Industrial Process operating under and controlled by a **CODE OF PRACTICE** in line with federal regulations to control pathogens & ensure animal food safety
  - Regulated to ensure safety of employees, the public, & the environment by **STATES & the FDA, EPA, & USDA**
  - Although fossil fuel can be required to produce steam for heating, many renderers use their fat products to fuel boilers, increasing energy independence.
  - Nearly all **CARBON IS RETAINED** within rendered products and reused rather than becoming GHG
  - **200 kg GHG*** Greenhouse Gas

- **INDUSTRIAL COMPOSTING**
  - Low energy requirements but, **45–75%** of the carbon in meat by-products is released as **CO₂**, and **4–20%** is released as **METHANE** (with **25x** the global warming potential of **CO₂**)
  - **SMALL FRACTION** of meat and meat by-products can be recovered as fertilizer
  - **DIFFICULT** to destroy pathogens
  - REGULATIONS on composting & anaerobic digestion vary from state to state
  - NO CONSISTENT FEDERAL REGULATIONS on air emissions or wastewater.

- **ANAEROBIC DIGESTION**
  - Recovered resources have relatively **LITTLE ECONOMIC VALUE**
  - **METHANE FUEL GAS**
  - **FERTILIZER**
  - To destroy pathogens requires **STRICT TIME & TEMPERATURE CONTROL** with this control, pathogens and environmental problems increase **DRAMATICALLY**
  - SEEPAGE CAN HARM people, animals, and plants
  - **60–500 kg GHG***

- **ENVIRONMENTAL SUSTAINABILITY**

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Food Recovery Hierarchy
www.epa.gov/foodrecoverychallenge

Source Reduction
Reduce the volume of surplus food generated

Feed Hungry People
Donate extra food to food banks, soup kitchens and shelters

Feed Animals
Divert food scraps to animal feed

Industrial Uses
Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

Composting
Create a nutrient-rich soil amendment

Landfill/Incineration
Last resort to disposal

FOR MORE INFORMATION:
North American Renderers Association
500 Montgomery St, Suite 310, Alexandria, VA 22314
703) 683-0155 • info@nara.org

www.nara.org
Twitter: @Renderers
Facebook: North American Renderers Association