

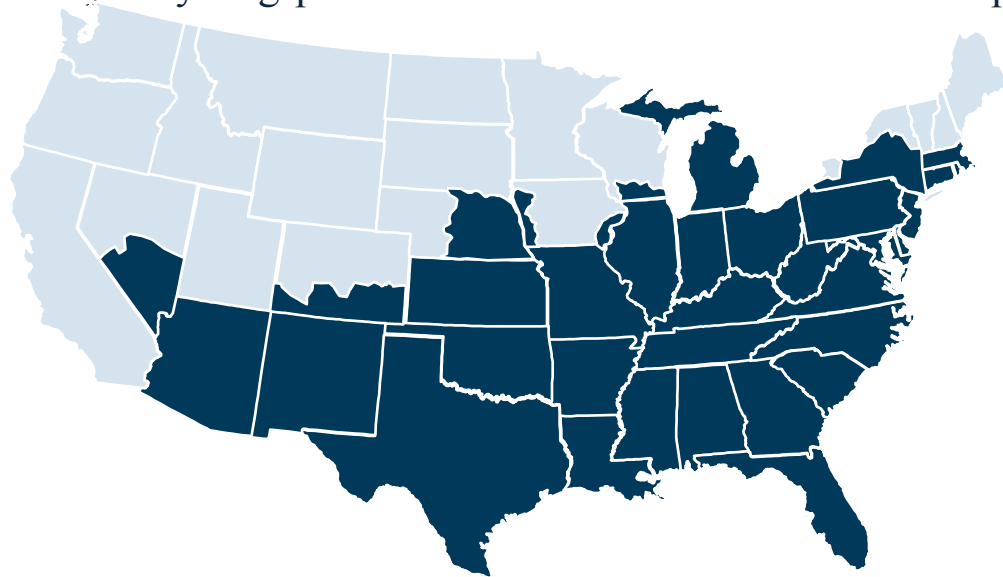


SERDC Food Recovery Summit

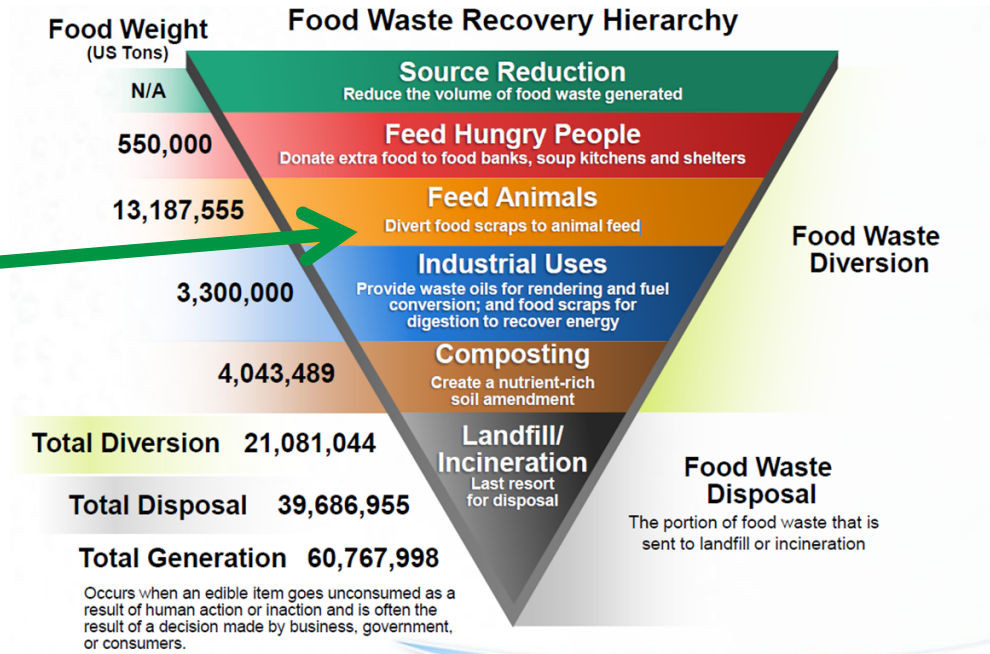
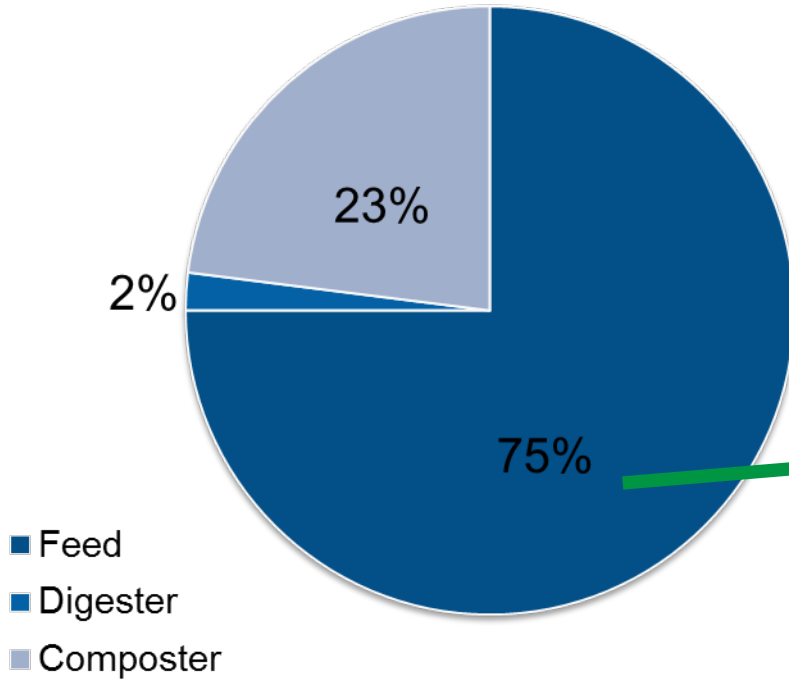
The Role of Animal Feeding in Food Recovery

November 18, 2015

- Incorporated in 2009 for explicit purpose of diverting food waste from landfills
- Team has decades of experience developing and managing recycling programs
- Largest collector of grocery related food waste in the US, serving over 6,500 locations
- Operations in 36 states and Puerto Rico
- Over 500,000 tons diverted from the landfill annually
- Unique and highly specialized equipment designed specifically for the food waste recycling industry
- Developed proprietary recycling process to extract nutritional value from pre-consumer food waste



End Use Percentages



Safety and Nutrition Trial(s)

- Watonga, OK
- Dairy Study

Experts on Staff

- Regulations
- Reporting Requirements
- Rations (Feed Mixtures)

Challenges

- Containment
- Processing
- Contamination
- Market Limitations



Watonga, OK – Trial Completed By Bos Technica Research Services

Trial Methods

- Animals - 1500 head steers of Mexican origin (750 in Test Group “FRUIT” and 750 in Control Group)
- Initial BW = 595 lbs
- Facilities - 14 dirt-floored pens w/fence line bunks
- Diets - CONTROL = conventional feed yard diet and FRUIT = replaced 20% corn (DM) w/fruit and vegetable by product in top ration
- Roughage levels were similar (5.1% DM)
- Fat inclusion (CWG) was similar (DM) – FRUIT diet included more total ration fat due to fat content of product

Trial Results

	CONTROL	FRUIT
Prime, %	0.41	0.21
Choice, %	49.69	51.98
Select, %	41.41	37.84
Standard, %	3.93	6.44
Commercial, %	4.55	3.53
Dark Cutters, %	1.45	2.29
Lights, %	0.00	0.00
Heavies, %	2.48	2.49

	CONTROL	FRUIT
Mortality, %	0.00	0.00
Morbidity, %	3.30	1.86
Respiratory, %	3.09	1.65
Digestive, %	0.00	0.00
Other, %	0.21	0.21
Removals, %a	0.41	0.41

	CONTROL	FRUIT
In wt., lbs	327	327
HCW, lbs	845	850
Marbling score	403.12	408.49
Dress, %	65.61	65.74
ADCG, lbs/d	2.13	2.15
Feed:carcass gain	8.31	8.25

Dairy Study – In Progress and is being completed by Dr. Froestschel,
Ruminant Nutrition Consulting

Objectives:

- Establish a successful model of a dairy farmer using Fruit-plus as an energy supplement for their dairy herd.
- Determine the nutrient value of Fruit-plus fed included at 15% of the dry matter in total mixed rations for lactating dairy cattle.
- Measure the cost-benefit of Fruit-plus as an energy supplement for lactating dairy cattle.



Organix Has on Staff or Retainer

- 6 PhD Nutritionists
- 3 Animal Health Degreed Professionals
- 2 Environmental/Mechanical Engineers
- 2 EHS Professionals

Regulatory Oversight

1) EPA / State / Local

- Solid Waste vs Product vs Recycling
 - Beneficial Use Permit
- Storage of Product (Ground Water)
- Building Permits

2) USDA / State Chemist / State Dept of Ag

- Approved Labels – Minimum Guarantee
- Tonnage Reports and Annual Registration Renewals
- Ration Expertise (Animal Welfare)

3) FDA

- FSMA



Proper Containment



Winter



Summer



Concrete Containment Pad

Screening and Processing



1. Reduces particle size - Less choking hazard and improved palatability
2. Makes product more uniform - Eliminates consistency issues of Raw product
3. Eliminates oxygen in wet products - Extends shelf life of product
4. Segregation of liquid - Makes product easier to handle
5. Reduces sorting of product - Helps make sure of even mixed TMR's

Contamination



Properly De-Packaged



Contaminated

Key Controls To Prevent Contamination

- Store Training
 - New Hire
 - Refresher
- Locking Bins
- Standard Operating Procedures
 - Organix Employees
 - Generator Employees
- Corporate Support
 - Cultural Change
 - Program Ownership (Site Champion)



FOOD WASTE RECYCLING PROGRAM

866-301-8500

NO TRASH! NO BASURA!

UNACCEPTABLE ITEMS

- NO MEATS
- NO PLASTICS
- NO GLASS
- NO FLOWERS
- NO SOIL
- NO TRASH
- NO METAL

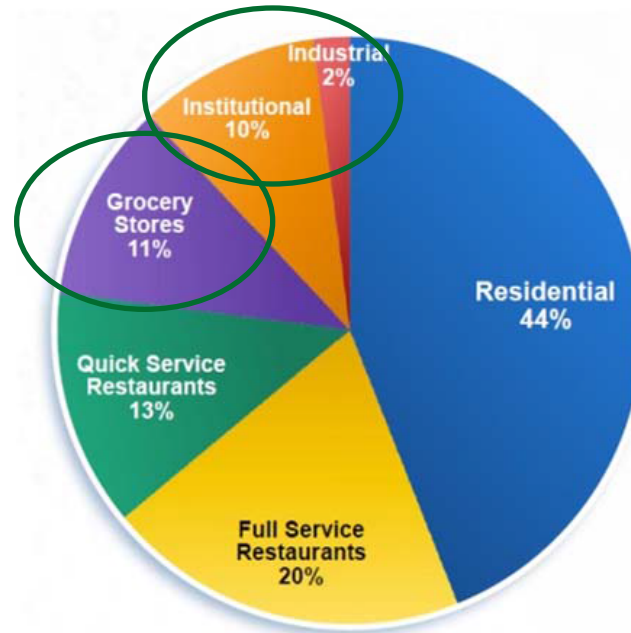
ACCEPTABLE ITEMS

- FRUITS
- VEGETABLES
- BAKERY
- DAIRY
- PASTA

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Market Limitations



Only Source Separated Pre-Consumer Fruits, Vegetables and Bakery can Be feed to Cattle. No Meats

Seasonal Variance

- Feedlot Needs and Collected Volumes are Inverse by Seasonal Demands

Demographics

- Dense Human Population Areas are Typically Not Near Feedlots

Benefits of Grocery Unsold Product Going to Feed:

- Pre-consumer grocery food waste is a proven corn replacement in bovine diets.
- Provides feed savings for the farmer.
- Establishes outlet opportunities in areas where there are no composters or digesters.
- Eliminates the high tip fees at compost sites which in turn allows an affordable collection cost to the generator.
- Re-use of a product which contains energy back into the food chain instead of a landfill.

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