Composting Animal Bedding at CU Boulder
A Multi-Department Success Story

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2019 I²SL conference
Learning Objectives

➢ Share experiences in our quest to compost animal bedding wastes.
➢ Provide information for those who may consider composting animal bedding at their facilities.
Overview

- Stakeholders
- Timeline
- Motivations
- Constraints
- Pilot Project
- Project Expansion
- Into the Future
- Questions/Acknowledgments
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Stakeholders

- CU Green Labs (CUGL)
- Facilities Management (FM)
- Environmental Health & Safety (EHS)
- Office of Animal Resources (OAR)
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Timeline

2013
- Group of undergraduates conducted a composting feasibility study
- Office of Animal Resources (OAR) created

2015
- Consortium of stakeholders meet
- CUGL, FacMan, & EHS begin meeting with OAR to discuss possibility of composting
- Stakeholders meet periodically for next ~2 years

2017
- Pilot project funded & implemented
- Apply for & awarded Sustainable CU Grant to fund pilot project
- Pilot project implemented

2018
- Composting expands to all vivaria
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Motivations

Photo courtesy: David Horsey/Los Angeles Times
Motivations


PLASTIC BANS ARE GROWING GLOBALLY

- **TOTAL BAN**
- **TAX**
- **PARTIAL BAN OR TAX**

Source: Reuters, SBS News, The Earth Day Network, Reusethisbag.com and other public sources

CORPORATE SUSTAINABILITY GAINS STEAM OVER LAST FIVE YEARS

**PRE-2013**
- ONLY 20% OF S&P 500® COMPANIES, A MULTI-INDUSTRY STOCK GROUP, OF LARGE CAPITAL U.S.-BASED COMPANIES, CHOOSE TO DISCLOSE THEIR ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) INFORMATION

**2013**
- A 10 YEAR BASES STUDY SHOWS ONLY 5% OF ALL INITIATIVES INCORPORATING SUSTAINABLE BENEFITS - INCLUDING NATURAL AND ORGANIC.

**2014**
- 65% OF SALES WERE FROM BRANDS USING SUSTAINABLE MARKETING.
- WINNING INNOVATION CONCEPTS TESTED BY BAGES INCLUDE: ECO-FRIENDLY PACKAGING, LESS PACKAGING, NATURAL INGREDIENTS, AND PLANT BASED.

**PRESENT**
- NINETY-NINE PERCENT OF FOOD MANUFACTURERS, RETAILERS AND ASSOCIATIONS SIGNED THE UK PLASTICS PACT.
- 85% OF S&P 500® COMPANIES DISCLOSED THEIR ESG STATUS.
- ALMOST A QUARTER (22%) OF 2018 SUPER BOWL ADS WERE SOCIALLY-CHARGED.

"Our goal is nothing less than being the global leader in sustainability - and that aspiration carries with it great responsibility to advance on all fronts...”

-Phil DiStefano, CU Boulder Chancellor
Motivations

Consistent with Boulder County and the State of Colorado, CU Boulder has a goal to be zero waste by 2025.
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Constraints

Known Constraint

Can the animal bedding be composted?
Would it be safe to use?

Image courtesy of: http://www.farmyardorganics.co.za/our-process/
Constraints

Known Constraint

Review the solid waste regulations for Colorado.

- Composting rules

Proposed or Realized Solution

Photo courtesy of: https://www.glostone.com/solutions/safety-services/audit-services/
Constraints

Known Constraint

Find a location to compost the waste.
Could it be done onsite?

Photo courtesy of: https://www.biocycle.net/2014/01/20/county-yard-trimmings-facility-achieves-ems-certification/
Constraints

Known Constraint

Identify a composting company that is willing and able to compost the waste.

Animal bedding consists mostly of Aspen chip bedding, cotton nestlet and brown crinkle paper.

Proposed or Realized Solution

Photo courtesy of:
https://a1organics.com
Constraints

Known Constraint

Formalize an ongoing review process of waste constituents to exclude hazardous materials from animal bedding sent for composting.

Proposed or Realized Solution

EH&S review of proposed protocols to exclude:
- Chemical hazards
- Biological hazards
- Radiological hazards (rare)

Communication of hazards and waste handling procedures within the Safety SOPs.
Constraints

Example of a chemical hazard flag on a ventilated rat cage
Constraints

Known Constraint

Determine physical/infrastructure limitations at each of facilities and collection sites

Proposed or Realized Solution

Each animal facility at CU Boulder is in a different building, thus each has different infrastructure support and ability (or lack thereof) to accommodate additional items in support of composting
Constraints

Gold building

Wilderness Place building
Constraints

BioFrontiers building
Constraints

Known Constraint
Select an appropriate compost bag that balances capacity, thickness, and price.

Proposed or Realized Solution
Compost bags are generally thinner and more expensive compared with bags destined for landfills.
32 gal., Compostable Trash Bag, Compostable Material, Coreless Roll, Green, PK 100

Web Price $243.79 / pkg. of 100

One Time Delivery

Add to Cart

Expected to arrive Mon. Sep 16.

Shipping Weight 12.56 lbs.

Country of Origin USA | Country of Origin is subject to change.

Note: Product availability is real-time updated and adjusted continuously. The product will be reserved for you when you complete your order.
Constraints

Compost bags can be ripped easily, especially when full!
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2017: Pilot project begins at Gold Vivarium!
Pilot Project

In 2017, we submitted a grant proposal from Sustainable CU’s Environmental Improvement Initiative.

We were awarded a small grant of ~$2500, with which we purchased 8 toters and a lot of compost bags.
Pilot Project

A look at the quantity of supplies on a typical day in the Gold vivarium
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2018: Composting begins at all primary OAR facilities.
Project Expansion

BioFrontiers vivarium - ventilated mouse cages
Project Expansion

BioFrontiers vivarium - One (busy) day’s worth of composted bedding!
Project Expansion

Stacks of rat cages at Wild
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Into the Future

Secure funding

Do we need to use compost bags?

Compost at satellite facilities?
Questions?

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