

MONTANA STATE UNIVERSITY EXTENSION
MONTANA AGRICULTURE

Safely Utilizing Animal Manure and Compost on Small Produce Farms: a Montana Perspective

"The rules and best practices don't have to be overwhelming. Produce farms can safely benefit from using manure and compost."



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Manure Sources

- Montana is primarily a cow/calf state
 - Some beef backgrounding and finishing
 - Some dairies
 - Some hog CAFOs
- All counties have sufficient conventional crop ground relative to manure nutrients
 - Areas of high nutrient concentration may exist within counties
 - easily remedied with nearby export

Where are Manure Nutrients Going?

- Conventional crop and forage ground
- Reclamation projects
- OG cereal grains
- Turf and green industries
- **Small produce farms and market gardens**



Emerging Opportunities

- Vegetable and specialty crops
 - new acreage in need of soil renovation
 - ongoing fertility




MSU students spread and incorporate manure-based compost under movable high-tunnel.



Perceived Barriers

- Social barriers between animal and specialty crop producers
 - Missed market opportunities for manure
 - Facilitation and education needs
- Use concerns and confusion around rules and regulations
 - Concern over food safety
 - Concern over herbicide residues
 - Concern over implications for organic certification





Short Case Study

- Organic diversified farm and cheese plant
 - dairy goat and pig enterprises waste
 - vegetable enterprise waste
- Compost manufacturing for:
 - onsite animal feed crops
 - onsite organic vegetable crops
 - occasional compost sales



Food Safety Modernization Act (FSMA)

- Quick review:
 - The Produce Safety Rule (PSR) is one of the seven FSMA rules
 - Focuses on prevention of food safety issues
 - Rules of FSMA are science and risk-based*


FDA FOOD SAFETY MODERNIZATION ACT

*additional research can guide further understanding of risk and policy adaptations.



Practical “Musts” and “Shoulds”

- **Must** store and convey manure and composts so that they do not impact/interact with:
 - FSMA/PSR covered produce,
 - food contact surfaces,
 - areas used for a FSMA/PSR covered activity,
 - water sources and water distribution systems,
 - and other soil amendments.




Practical “Musts” and “Shoulds”

- **Should** practice steps to prevent cross-contamination of untreated and treated amendments and produce:
 - Keep raw manure and finished compost in separate areas
 - Designate specific equipment and tools for handling soil amendments
 - Clean and sanitize equipment and tools that contact soil amendments and fresh produce



Practical “Musts” and “Shoulds”

- **Should** practice steps to prevent cross-contamination of untreated and treated amendments and produce:
 - Limit access/traffic in and around soil amendment storage or processing areas (humans, equipment, animals)
 - Use manure/amendment storage environmental BMPs
 - Stormwater management
 - Run-off/leachate capture and management
 - Appropriate to climate, environment, state and local rules



GAP and best practices

Overlap between USDA GAP standards and FSMA Produce Safety Rule (PSR) requirements


- Treated over non-treated
- Application Timing; extending harvest interval
- Application Methods
- Handling and Storage
- Recordkeeping




Organic Certifications




- Soil prep/renovation and transition
 - 3 years after last prohibited material applied
- Ongoing use
 - Previous reference (90/120 days)
 - “90/120” rule does not apply to properly finished compost and some heat-treated manure products*
- Ag chemical residues in manure/compost
 - **Producer due-diligence**, i.e. test plot, bioassay, letters of certification or analysis...

* Always check NOP approved products list



Agency and Extension Roles


- PSR and NOP
 - MT Dept of Ag (MDA)
 - other OG certifiers
- Regulatory education
 - MDA
 - Extension
 - trade organizations
- GAP
 - MDA
 - Extension
 - producer co-ops

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Summary

- Manure and compost are valuable nutrient inputs for small produce farms
- Manure and compost products are NOT generally prohibited
- Best practices and rules should be followed



MSU THG-CSA wash and retail barn.


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Summary

- Food safety risks associated with using manure can be minimized with proper management
- Focus on preventive measures over widespread sampling and testing.

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MSU SFBS student eating a snap pea from the field.

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