

BALANCING FOOD SAFETY AND SUSTAINABILITY

Opportunities for Co-management – Soil Amendment with Organic Materials

*This is one of a series of resource sheets for **food safety auditors** that describe conservation practices commonly used in agriculture's production environment.*



Images of Mulching¹ and Composting² in production fields

This information will help you to

Recognize when organic materials are intentionally added to the production fields as soil amendments.

Understand the purpose addition of organic amendments serve in the agricultural environment.

Recognize the language growers may use to explain why these practices are important in their production environment.

Understand when audit standards may consider these practices as addressing farming impacts on the environment and/or as potential contributors to food safety risk.

Organic soil amendments applied to the soil surface (e.g. mulch) or incorporated into the soil (e.g. compost) help to maintain or improve the physical, chemical or biological condition of the soil by increasing [soil organic matter](#).

Mulching is the practice of applying plant residues or other suitable materials to the soil surface to conserve moisture, prevent compaction or crusting, reduce [soil erosion](#) and improve [infiltration](#), control weeds, and help establish plant cover.

¹ This practice is currently listed as [Mulching #484](#) by the USDA Natural Resources Conservation Service. The NRCS National Practice Standards are updated regularly. Some states may include additional guidance; consult your local NRCS field office.

² Composting is not a separate practice standard for conservation by the USDA Natural Resources Conservation Service.

Compost is [defined](#) by the US Composting Council (2018) as the product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds and stabilizes the carbon such that it is beneficial to plant growth. Compost is typically used as a soil amendment but may also contribute plant nutrients. Compost incorporation into soils adds [organic matter](#), may improve soil structure, improve [infiltration](#) and water holding capacity, supply plant nutrients and improve the nutrient holding capacity of the soil.

Advantages ¹	Disadvantages
Characteristics shared by practices	
<ul style="list-style-type: none"> Improves soil health Improves infiltration 	
Mulching	
<ul style="list-style-type: none"> Reduces soil erosion by wind and water Reduces soil compaction Improves soil moisture conservation Suppresses weed seed germination 	<ul style="list-style-type: none"> May wash off steep slopes and plug drains or culverts if not anchored into soil Straw mulch may contain weed seeds Depending upon source, mulch materials may contain pathogens
Compost amendment	
<ul style="list-style-type: none"> Improves soil water and nutrient holding capacity May supply plant nutrients 	<ul style="list-style-type: none"> Depending upon source and quality control in production, compost may contain pathogens

¹From [Farm Water Quality Management Practice Sheet](#) Mulching #484

In some audit standards this practice may help producers to demonstrate knowledge of the impacts of farming on the environment, including fugitive dust. They may trigger concerns about soil amendments of unknown quality.

Scenarios

Producer has a letter of guaranty, certificate of analysis, and turn records from the supplier that states that the compost lots he has applied to his production field are pathogen free.

Additional Resources

[Balancing Food Safety and Sustainability: Opportunities for Co-management, 2012](#)

[The Art and Science of Composting, 2002](#)

[US Composting Council Factsheet: Compost and Its Benefits, 2008](#)

Additional resources on co-management of food safety and sustainability may be found at on the UC Food Safety Website under the [Pre- and Post-Harvest Produce](#) link. You can also contact Mary Bianchi, UC Cooperative Extension Emeritus Farm Advisor in San Luis Obispo County at mlbianchi@ucanr.edu.

It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at <http://ucanr.edu/sites/anrstaff/files/215244.pdf>). Inquiries regarding ANR's nondiscrimination policies may be directed to John I. Sims, Affirmative Action Compliance Officer/Title IX Officer, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1397.