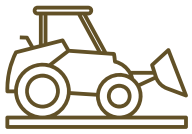
Soil Health and Composting

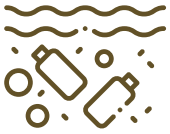
Local Policy Barriers and Strategies for Urban Agriculture

Healthy soil is essential for productive urban agriculture. It supports strong plant growth, manages water efficiently, stores carbon, ensures food safety, and sustains vital urban biodiversity. Like rural producers, most urban farmers grow crops directly in soil, but many city parcels are not immediately suitable for food production. Urban soils may be compacted, nutrient-depleted, contaminated with hazardous chemicals, or sealed beneath concrete or asphalt. A site's land use history—ranging from industrial activity to the once-common use of lead-based paint—often shapes present-day soil conditions and must be considered by both farmers and policymakers who support growing food in city soil.

Common Urban Soil Concerns and Associated Site Histories



COMPACTION
Compacted soil inhibits root growth and water movement. The site likely had a history of heavy machinery use (from construction and demolition) and/or concentrated foot traffic.



CONTAMINATION
Soil is contaminated with salts or chemicals, including heavy metals, from a history of industrial land use, upwind industrial use releasing airborne contaminants, lead paint, and/or salted roads.

ORGANIC MATTER DEPLETION
Soil shows low levels of biological material, which can lead to reduced soil fertility and water retention. The site had likely been kept bare or covered with inorganic material, or the original topsoil had been removed.

SOIL SEALING
Soil is sealed beneath an impervious surface that prevents water from reaching the soil. This describes sites that have been paved for parking lots, sidewalks, driveways, roads, or old building foundations.

CITY HIGHLIGHT

Phoenix's Brownfields to Healthfields Initiative

In 2017, Phoenix launched its Brownfields to Healthfields initiative, using a $400,000 EPA Brownfields Program grant to clean up ten contaminated sites across food-insecure neighborhoods. These sites—including farms, community gardens, school gardens, and a food hub—have been remediated to remove hazardous substances and enable the production of safe, fresh food.

Soil Health and Composting Barriers and Policy Strategies

To farm safely and successfully, urban producers must test their soil, understand site history, and consider remediation strategies—including raised beds and composting. Local governments can support this work by offering soil testing resources, providing remediation guidance, and removing barriers to composting and other on-farm practices that build soil health. Here are a few common challenges to urban soil health and policy strategies that cities can use to help farmers grow food safely in healthy soils.

COMMON BARRIERS FOR FARMERS	STRATEGIES FOR POLICYMAKERS
Soil testing is costly or inaccessible, or their results are difficult to interpret.	Offer free or subsidized soil testing and interpretation.
No city agency is tasked with soil oversight and soil is often damaged or neglected during development as a result.	Assign responsibility for soil health to an appropriate body in city government.
Healthy soil practices like composting and cover cropping are discouraged or restricted by zoning ordinances, including nuisance laws or burdensome requirements.	Update the zoning code to explicitly allow composting and other soil management practices.

Best Practices for Farmers to Maintain Healthy Urban Soils

- **Research your site's history.** Understanding past land uses can help identify potential soil contamination risks.
- **Test your soil.** Look for local or state programs that offer free or subsidized soil testing, especially for contaminants like lead or other industrial pollutants.
- **Understand composting regulations.** Review your local zoning code and other regulations to determine whether on-site composting is allowed and under what conditions.
- **Develop a soil health management plan.** Use practices like composting, cover cropping, and crop rotation to preserve and improve soil health over time.
- **Seek technical assistance.** Contact your local university extension office or USDA Natural Resources Conservation Service office.

This fact sheet is part of a series of resources on legal topics related to urban agriculture and innovative production. It was produced with support from the Office of Urban Agriculture and Innovative Production at the U.S. Department of Agriculture.

Want to learn more?
View the whole project at **cafs.vermontlaw.edu/projects/urban-agriculture-and-innovative-production** or scan the QR code.