



United States Department of Agriculture  
Natural Resources Conservation Service

## Technical Assistance For Urban Gardens

Fruit and vegetables are an important source of nutrition, and growing them locally can foster a sense of community and accomplishment. With the renewed interest in community gardening and urban agriculture, NRCS Delaware is committed to helping communities ensure the safety and improve the quality of locally-produced fruits and vegetables. We work with landowners to help protect and conserve soil and water resources in urban and suburban areas, as well as the rural environment.

The NRCS-DE Soils Staff provides free technical assistance to community gardens in Delaware. Our soil assessment service can help you evaluate conditions in your gardens to help achieve the most successful of outcomes.

### X-ray Fluorescence (PXRF) Analysis

Healthy and successful community gardens require suitable site and soil characteristics. Soils in urban areas often contain high concentrations of lead and other trace metals which can be hazardous to plants, animals, and humans. The portable X-ray Fluorescence (PXRF) analysis can determine the concentration of lead and other trace metals onsite; the spatial variability and presence of any “hot spots,” and whether there is a need for raised beds.

### Other Soil Health Tests

Several soil health tests can assess if your garden soil is performing optimally from the physical, chemical and biological perspectives, ensuring the quality and quantity of your produce as well as the health of the local environment.



## An NRCS soil assessment will help you discover:

### Trace Metal Content

Onsite with portable X-ray Fluorescence (PXRF) analysis

### General Site & Soil Characterization

- Slope, aspect, surface stoniness
- Gen. Physical & Chemical Properties
  - Texture, structure, consistence
  - Depth to restrictive layer
  - Depth to seasonal high water table
  - soil pH

### Soil Health Indices

#### Physical

- Penetration Resistance (compaction)
- Infiltration (water movement into soil)
- Saturated Hydraulic Conductivity (water movement through soil)

#### Chemical

- pH and Salinity
- Cation Exchange Capacity
- Base Saturation
- Nitrate-Nitrogen, Potassium, Phosphorus

#### Biological

- CO<sub>2</sub> respiration

**USDA-NRCS**

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