



Assessing and Responding to Information and Training Needs Related to Urban Soil and Community Health



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1. Background

In New York City, there are more than 700 community gardens and urban farms. Increased activity in urban gardening for recreation, education and local food production, has led to greater numbers of urban residents interacting with soil. This, in turn, could lead to more people being exposed to soil contaminants. Urban gardens are often sited on land with a history of industrial or residential use, with heavy metals, organic chemicals and other contaminants deposited into the soil. There is also ongoing deposition of contaminants from sources such as road runoff and exhaust emissions.

2. Purpose of Pilot Project

A Cornell team of soil scientists and Extension educators launched a pilot project in 2008 to assess issues of concern and the need for information, research and education related to gardening in urban soils and protecting community health.

Though numerous soil information resources exist, current guidelines and best practices for traditional soil management are often not appropriate for increasingly diverse urban settings, such as school and community gardens, playgrounds, residential areas and other community sites.

Gardeners, residents, educators, land managers, and administrators need understandable soil information to enable them to effectively identify risks to community health and address concerns.

3. Convening Stakeholders to Assess Needs

In a September 2008 forum, Cornell convened 40 participants representing 28 diverse organizations and agencies (Figure 1).

The Cornell team sought to:

- Gain insight into the main concerns of practitioners and managers related to soil contamination and community health
- Identify strategies and resources for addressing the concerns

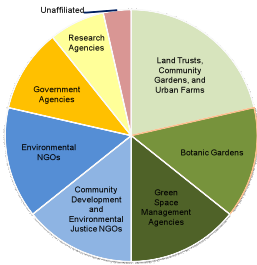


Figure 1. Types of organizations represented at the forum to assess urban soil issues in New York City.

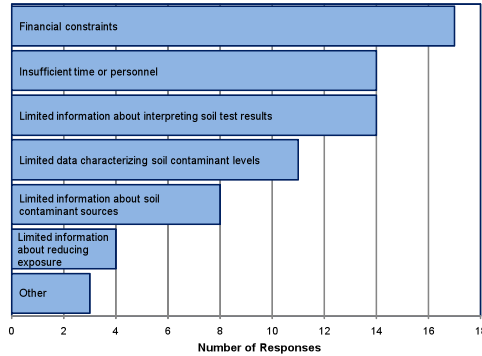


Figure 2. Factors identified as largest obstacles to addressing soil contamination by forum participants.



Figure 3: A community garden in Brooklyn that had been a vacant lot with illegal dumping. Top soil was brought in to cover the contaminated site.



Figure 4: Garden managers and educators learn about soil sampling and testing protocols.



Figure 5: Cornell researchers visit the compost operation at a Brooklyn community garden.



Figure 6: Urban gardeners and teachers learn about soil and strategies for mitigating exposure to contaminants.

6. Future Steps

The project is an on-going research and Extension education effort to develop and facilitate access to understandable and reliable soil information in order to build healthy, sustainable environments and communities.

A four-year collaborative research-education-community project involving Cornell, New York State Department of Health and GreenThumb was recently funded by the National Institute of Health, building on these pilot efforts.

4. Concerns and Needs of NYC Soil Users

Information gathered at the forum through discussions and a written survey yielded these primary needs:

- Reliable, research-based information about contaminants (types, sources, behaviors in the environment, health impacts)
- Training and information on site assessment, and soil sampling and testing protocol
- Information about and access to reliable and affordable soil testing labs with ELAP certification
- Universal guidelines for interpretation of soil test results
- Characterization of contaminant types and levels in New York City soils
- Continued discussions and collaboration among researchers, educators and practitioners

Concerns were also expressed about:

- Contaminants in municipal compost
- Liability issues and the closure or avoidance of gardens if soil tests reveal contamination

In a survey distributed at the forum, 84% of survey respondents said they needed more information about soil contaminants.

Survey respondents indicated several obstacles to addressing soil contamination (Figure 2).

5. Response to Needs

Our response focused on research, education and outreach strategies that could be undertaken collaboratively by partner organizations and Cornell.

As of December 2008, these actions have been taken:

- Ongoing distribution of information about relevant resources and events to more than 100 contacts from 50+ organizations and agencies with a stake in the safe operation of New York City's community green spaces.
- Completed and distributed three comprehensive fact sheets focused on soil contaminants, soil testing, and mitigating exposure, available free to the public on the Cornell Waste Management Institute website: (<http://cwmi.css.cornell.edu/soilquality.htm>).
- Convened a New York City soil and compost testing working group in December 2008 to further strategize how to develop soil testing protocol and interpretation guidelines and address the need for "clean" soil amendments.
- Delivered soil testing workshops at GrowTogether, a community gardening conference in the Bronx, and at Brooklyn Botanic Garden in March 2009.
- In August 2009, Extension educators presented a segment on soil contaminants in a garden-based curriculum training for educators and gardeners.
- Engaged in on-going collaboration with GreenThumb, New York City Parks Department's community gardens program, to test soils from the raised beds of 100 community gardens for lead and other metals. Other garden management entities in New York City have expressed interest to participate.
- Established government and non-profit agency partnerships in support of further program and proposal development.