Center for Environmental Sciences and Engineering
University of Connecticut

Protecting Children's Health

Preventing Lead Poisoning from Contaminated Soil in Community Gardens

Community gardens are public spaces where local residents can grow fresh, inexpensive, and healthful fruits and vegetables. In addition, these gardens often provide other benefits: they can connect neighbors, foster community self-reliance, provide opportunities for recreation and exercise, and reclaim neglected parcels of land. Dozens of Connecticut towns and cities now offer low-cost garden plots to their residents.

In Willimantic, CT, community gardeners grow corn, beans, squash, tomatoes, peppers, greens, and flowers

But community gardeners—in urban, rural, and suburban areas—are increasingly concerned with possible soil contaminants, such as lead. Lead is a toxic metal that can damage every system of the body. Although lead affects people of all ages, it is especially dangerous to fetuses and young children. It can harm their developing nervous systems and cause lifelong learning, behavior, and physical problems.

In Connecticut, the most common sources of lead in the soil are dust and chips from lead-based paints, exhaust from leaded gasoline, and lead arsenate in pesticides. Although all of these leaded products were banned by the 1980s, their toxic legacy remains. Once lead enters the soil, it stays there.

Gardeners and their families may be exposed to lead in soil through several pathways. Young children may be exposed by touching contaminated soil or plants and engaging in normal childhood behavior—putting their hands in their mouths. Both children and adults may breathe in contaminated soil dust, eat garden produce contaminated with soil particles that contain lead, and eat plants that have taken up lead from the soil.

The University of Connecticut's Soil Nutrient Analysis Laboratory, the Connecticut Agricultural Experiment Station in New Haven, and the Connecticut Community Gardening Association are addressing the concerns of community gardeners about lead and other heavy metals. These agencies are working together to assess soil and plant contamination in Connecticut's community gardens, to educate community gardeners about potential hazards, to develop guidelines for acceptable levels of heavy metals in garden soil, and to help gardeners find alternatives to contaminated soils.

Sample analyses have shown that some community garden soils exceed the U.S. Environmental Protection Agency's lead level of concern (400 parts per million).The Soil Nutrient Analysis Laboratory now routinely screens for lead when it assesses soil nutrients, flagging high levels for further analysis. The lab also distributes outreach materials to educate clients about the lead results.

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2007

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