

Lead in soil: Screening is the first step

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By Jill Daly / Pittsburgh Post-Gazette



Black Urban Gardeners and Farmers of Pittsburgh members Lisa Quinn, left, and Raqueeb Bey mix soil samples taken from a test area on a lot on Monticello Street in Homewood.

For gardeners, planning for spring planting starts now. There are some extra steps for those who want to plant on a vacant lot in the city.

On a recent sunny but cold afternoon, urban agricultural specialists and experienced urban gardeners were digging up soil samples for a prospective garden on Monticello Street in Homewood.

Raqueeb Bey and other members of the Black Urban Gardeners and Farmers of Pittsburgh Cooperative and helpers walked through brush and carefully placed samples from marked sections of the lot into brown paper bags to be tested for lead content. If no lead is found, or only a moderate amount is there, the garden will get the green light.

Ms. Bey, founder of BUG, said the group, with about 25 members, hopes to do some “hoop house” gardening (involving covered beds in tunnel-like setup, which extends the growing season), as well as some raised beds. She said they hope to grow produce to sell.

The sections on the lot were marked off by Jonathan Burgess of the Allegheny County Conservation District. He explained that one or two tests are not enough to know if lead is present over a large area, because lead doesn’t move in the soil.

“It can go toxic to safe in just a few feet,” Mr. Burgess said. In the testing process, samples are mixed to get a composite to detect lead. A deeper sample is obtained on problem spots. After being dried, samples are tested in the Conservation District office, South Side.

If people want to test their own yards, they can send samples to a lab. Penn State Extension testing will determine the total lead in the soil. That test is more costly than work done by UMass Soil and Plant Nutrient Testing Lab in Amherst, Mass., which looks only at the lead that is soluble, but includes a report on general soil nutrients.

As senior agriculture conservationist, Mr. Burgess has in the past worked primarily with farmers. For the past year, though, the district’s focus is on urban agriculture and reaching out to support gardens and green space in Allegheny County.

The BUG project is on six city-owned parcels and one Urban Redevelopment Authority parcel, where old houses once stood.

The lot is returning back to meadow with some small trees, lots of goldenrod gone to seed and stalks of invasive knotweed. There’s also an assortment of trash, including two pairs of high-top sneakers. At one point, the team flushed a rabbit from a knotweed patch.



Also there to help was Lauren DeLorenze, community outreach coordinator at Phipps Conservatory and Botanical Gardens.

It’s a relatively small lot, BUG volunteer Jabari Mason of Forest Hills said as he looked up from digging out a sample: “You have to look at things in a realistic way. You have to start off slow.”

Pittsburgh’s empty lots

For the approximately 7,200 vacant lots owned by the city or Urban Redevelopment

Black Urban Gardeners and Farmers of Pittsburgh members Lisa Quinn and Raqueeb Bey work on getting soil samples for testing on a lot on Monticello Street in Homewood. (Pam Panchak/Post-Gazette)

Authority, the city's Adopt-A-Lot program opens them up for all kinds of uses by individuals and nonprofits. The process is laid out on the city website: <http://pittsburghpa.gov/dcp/adoptalot/process>.

It starts with an intake form that is reviewed to see if the lot is available, said Andrew Dash, who manages the program and is assistant director of strategic planning for Pittsburgh.

"If that lot is available, we give them a one-day right of entry to do a soil test," he said. Depending on the planned activity and the lead content found in the test, plans may proceed to apply for an Adopt-A-Lot license. After a license is issued, underground utility lines are marked by PA One Call and planting can begin.

One rule stands fast: If lead levels are 1,000 parts per million, applicants are told to choose another lot — that one is off limits.

Lead threat

Lead is often found where industry or heavy traffic has planted particles of the heavy metal. But it's also prevalent in sites where old homes have been demolished, where painted wood and lead pipe debris leave traces of lead — a health hazard, particularly for young children and pregnant women.

The city's soil standards say there are no restrictions for soil with up to 150 parts lead per million. From 151 up to 400 ppm, people must wash hands immediately after leaving the lot. Paths must be covered with grass or mulch 3 to 4 inches deep.

From 401 to 1,000 ppm, people are advised to find another lot or modify the use by lining raised beds with geotextile barriers or using solid containers with clean soil. No digging is permitted on the lot.

Heather Manzo, a Penn State Extension educator and founder of the Pittsburgh Food Policy Council, explained it's important to leave soil with lead alone. Lead can be absorbed from dirt and mud on the skin, and inhaled and ingested from dust and dirt. If children are involved in the gardening, even low amounts can be hazardous.

Ms. Manzo said Penn State, Grow Pittsburgh and the Conservation District are each working to discover and share the best practices for safe gardening in the city. She said a big improvement is the district's ability to perform free soil tests on city lots, for community groups, nonprofits and Adopt-A-Lot applicants.

Free testing

Mr. Burgess tests soil samples with an XRF gun, using X-ray fluorescence. It's the same equipment used by the Allegheny County Health Department to test dust on surfaces suspected of lead contamination. XRF equipment costs about \$25,000.

Funded with a grant from a nonprofit, the district did about 750 tests in the last half of 2016, Mr. Burgess said. "We hope to exceed that this year."

There's no way of telling lead content in soil by appearance.

"It's hard to predict," he said, recalling a recent sample that tested 909 ppm and was taken from a grassy spot on a vacant lot, not near any industrial site. The highest lead level he's seen, he said, was 8,300 ppm from an East End site.

The results of recent soil testing on about three city blocks in Larimer, which would have cost about \$30,000 if not provided for free, is being reviewed by a group considering an urban farm at that location, Mr. Burgess said.

After testing last year, there are now about 64 beds in a Mount Oliver garden planned by Bhutan immigrants. "They brought seeds of their native vegetables, including squash, that they plan to grow," Mr. Burgess said. Coming up is testing for a Somali-Bantu community garden in the North Side.

Teaching moments

The BUG group, which formed in June 2015 and opened its farmers' market in Homewood last year, plans to teach young people about gardening at the new site, Ms. Bey said. Ideas include a program to work with middle and high school students at the nearby Westinghouse Academy, a twice-a-week program to teach therapeutic farming, which can help people with post traumatic stress disorder, depression and anxiety, and instruction in landscape design.

"Homewood in the 1800s was farmland ...," she said. "Now thanks to urban farming, Homewood's empty lots are farms again."

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<http://www.post-gazette.com/news/health/2017/02/14/Lead-in-soil-Screening-s-the-first-step/stories/201702140004>

and

<http://pittsburghchamber.coop/news>

