

Garden-Fresh Doesn't Preclude Hidden Health Hazards; Watch Those City Chickens

Urban soils can contain chemicals from years of activity; Lead is often found



New research from the New York State Department of Health's (DOH) Center for Environmental Health may be ruffling a few feathers.

A recent study found that more than half of the eggs tested from chickens raised in public neighborhood gardens in New York City contain detectable levels of lead. And as urban residents flock to raise chickens in backyards, or in other neighborhood settings, such as community gardens, the egg research is raising public interest and awareness.

Lead in eggs is thought to come from contaminated soil eaten by city-dwelling chickens. The DOH research team collected eggs (58) from community gardens around New York City. About half of them (28) showed detectable levels of lead, unlike their store-bought counterparts, which did not have detectable levels. However, almost all the garden eggs had lead levels of less than 100 parts per billion (ppb). Only one egg tested higher than 100 – it contained 167 ppb.

While the U.S. Food and Drug Administration has no limit for acceptable lead levels in eggs, they set a limit in 2005 of 100 ppb for candy consumed by small children. "We adopted 100 parts per billion as a guidance value," said Henry Spliethoff, the research scientist with the DOH's Bureau of Toxic Substance Assessment who led the study. "Eggs with lead levels below that guidance value, even with a fairly egg-heavy diet, do not pose a significant health risk."

Lead can be harmful to humans, even at low quantities. While lead is toxic to everyone, unborn babies and small children are at greatest risk for health problems from lead poisoning. Lead can harm a young child's growth, behaviour, and ability to learn. New York State has had some of the highest rates of childhood lead poisoning. Young children often come into contact with lead indoors from crumbling or peeling paint in older homes. Lead paint was banned in the 1970s, but older residences may contain layers upon layers. New York State has the oldest housing stock in the nation. Children who play outdoors can also be exposed when soil contains lead from deteriorating paint, leaded gasoline deposited long ago, and from previous industrial contamination.

DOH researchers were encouraged to find that all the eggs tested – except one – had lead levels below 100 ppb. Even so, they want chicken keepers to be aware of the potential risks associated with contaminated soil and take measures to minimize those risks. Spliethoff cautions urban chicken farmers to be aware of their soil's lead levels and make efforts to minimize their flock's exposure by building separate chicken runs, putting food in a feeder, and laying down extra mulch or soil. "It's important to reduce lead exposure wherever possible," he said.

"Healthy Soils, Healthy Communities," a community-research partnership, collaborated on the study after finding almost no data on the safety of eating eggs from urban chickens. DOH worked with Cornell University; Cornell Cooperative Extension – New York City; New York City Parks' community gardening organization, Green Thumb; and other stakeholders with interests in community gardening.

The National Institutes of Health/National Institute of Environmental Health Sciences funded the research through the Partnerships for Environmental Public Health program.

To find out more about the *Healthy Soils, Healthy Community* project and read about the 10 best practices for healthy gardening, visit <http://cwmi.css.cornell.edu/healthysouls.htm>.

Got Chickens?

- Use clean soil when constructing new chicken runs. Consider having the soil tested by a NYS-certified laboratory.
- Add clean cover material to chicken runs. A layer of clean soil, mulch or straw may help keep chickens from being exposed to underlying soil.
- Use a feeder instead of scattering feed on bare ground to help reduce the amount of soil chickens ingest.
- Look for possible sources of lead, such as structures painted with lead-based paint, and keep chickens away from them.
- Limit foraging activity to areas where soil is not suspected to have higher concentrations of lead or other chemicals.
- Remove small loose objects that chickens might ingest from chicken runs and foraging areas. Some items can harm chickens if they are eaten, and some may also be a source of lead or other chemicals.
- Don't feed chickens unwashed plant material from areas of your garden where soil has higher concentrations of lead or other chemicals.
- Provide a calcium supplement. An adequate calcium supply is important for laying hens, it may help reduce the amount of lead that gets into their eggs.

--From *Healthy Soils, Healthy Communities*

Did You Know?

New York State requires health care providers to test all children for lead in their blood when they are one and two years old. Parents can also ask their child's health care provider or nurse if their child should get a blood lead test and what the lead test results mean. To get more information about lead and how to prevent lead poisoning, visit the DOH website, www.health.ny.gov/environmental/lead.

--Written by Gwen Mergian and originally published in the DOH Insider.