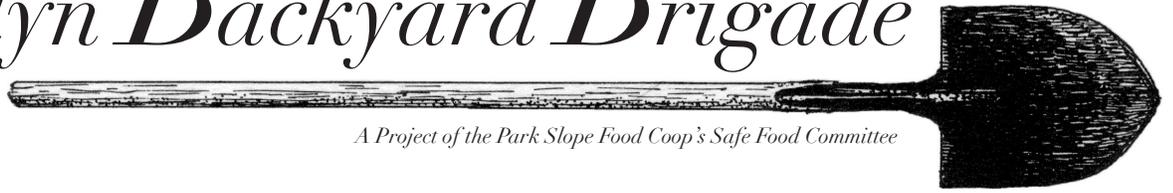


# Brooklyn Backyard Brigade

March 2010

A Project of the Park Slope Food Coop's Safe Food Committee



## Urban Gardening and Soil Contamination

Are you considering turning your backyard into a space for growing fruits and vegetables, but concerned about what might be in your soil? You should be.

Soil outside residences and in community gardens in New York City often contains heavy metals such as chromium, lead, nickel, copper, zinc, cadmium, and arsenic. Contaminants are most concentrated in northern Brooklyn, including Greenpoint, Bushwick, and Williamsburg. But wherever you are in New York, assume your soil is contaminated unless you test it and determine that it's safe.

Heavy metals in soil not only contaminate produce, but can also be inhaled and ingested by people gardening. Children are the most vulnerable to lead poisoning and other contamination effects, so be especially careful if you're a parent.

### GET YOUR SOIL TESTED

First, have your soil tested. Here in Brooklyn, you have two options:

- Brooklyn College's Environmental Sciences Analytical Center will test your soil for a small fee. They'll also test the heavy metal content of your vegetables, fruits, and herbs so you can ensure your preventive measures are keeping your produce safe. Visit [www.brooklyn.cuny.edu/pub/departments/esac/1535.htm](http://www.brooklyn.cuny.edu/pub/departments/esac/1535.htm) or call (718) 951-5000, ext. 2647.
- Cornell University's Nutrient Analysis Lab-

oratory also offers soil analysis for a small fee. Visit <http://cnal.cals.cornell.edu> for more information on requesting a Total Elemental Analysis. You can also send an e-mail to [soiltest@cornell.edu](mailto:soiltest@cornell.edu) or call (607) 255-4540.

### MAKING YOUR BACKYARD GARDEN SAFE

If your soil test shows little or no contamination, you're in good shape. If your soil sample reveals contamination, all hope is not lost. You have several options. You can choose to grow produce that's less likely to absorb contaminants; use containers or a "raised bed" so your garden doesn't have contact with the contaminated soil; enrich your soil; plant crops that help clean your soil; or completely replace your soil. Since there are no consistent guidelines for safe levels of soil contamination, and because different labs use different thresholds, you may choose to take some of these precautions even if your soil test is fine--especially if you have children or pets.

### GROW SAFER CROPS

If your soil is contaminated with lead, the safest plants to grow are fruiting crops like tomatoes, squash, beans, corn, and eggplant, because the part of the plant you eat tends not to accumulate lead. The most dangerous are leafy plants like herbs and greens--because they leach lead from the soil--as well as root vegetables like potatoes and carrots, because contaminated soil clings to them, increasing the risk that you'll ingest it.

### CREATE A RAISED BED OR USE CONTAINERS

If you want to grow more vulnerable crops like leafy greens or root vegetables, or if your soil is too contaminated to grow even the safest plants, you can create a raised bed, which is a garden separated from the ground soil by a barrier. With basic carpentry skills, you can build a wooden frame, line it with landscaping fabric, and fill it with clean soil, compost, and manure. You can also grow produce in containers such as pots, crates, and wooden boxes by filling them with clean soil. If you choose the container-garden route, you should take the precautionary measure of covering the contaminated soil by paving, planting groundcovers, or heavily mulching over it. Leaving dry, contaminated soil exposed can allow lead-bearing dust into the air, where it could be ingested.

### ENRICH YOUR SOIL

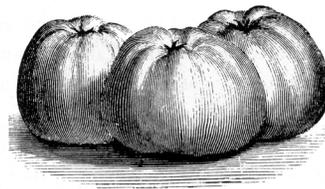
You can also change the quality of your soil. By mixing in lots of compost, mulch, and uncontaminated soil, you can reduce the concentration of contaminants. Alkalinizing soil by adding lime or compost can also help increase the pH level. When the pH level of the soil rises above 7, lead bonds with soil particles, making the lead less likely to be absorbed by plants and by the human body.

### CLEANSE YOUR SOIL

Another option is to cleanse your soil by planting Indian mustard and spinach for a couple of seasons. Growing these plants for just three months can significantly reduce the lead content in soil. If you plant these crops to cleanse your soil, remember to harvest and dispose of them as toxic waste. Though leaching lead from your soil in this way will significantly reduce your risk of exposure, the soil may still not be safe enough to grow in, especially if you're growing food for children. So after several plantings of greens, have your soil retested.

### REPLACE YOUR SOIL

The most drastic and costly option is to have your soil professionally removed and replaced with new, uncontaminated soil. This usually involves having several feet of soil dug out and replaced with clean soil. Once the soil has been replaced, you can cover the yard with new sod or plant a garden.



Please contact us at  
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with any questions.