



Know Your Soil

Fact Sheet

Bulletin #2281

Lead in the Soil

Lead is a poisonous element that is especially hazardous to young children. It is present in the environment in many forms.

Much of the lead that we come in contact with is in the soil. It gathers near lead-painted buildings that have been weathered, or have been scraped, sanded or sandblasted.

Lead is present in all soils at a normal level. At normal levels, it doesn't cause health problems. Soil is considered uncontaminated if it has less than 50 parts per million (ppm) total lead content. Soils with lead level of 300 to 500 ppm are considered moderately contaminated, but OK for gardens.

The only way to know the lead content of your soil is to test it!

Soils with levels above 500 ppm should not be used for gardening at all. The soil should be removed or isolated with a permanent grass cover or mulch.

Airborne lead from industrial emissions and auto exhaust also adds lead to the soil. Even though unleaded gasoline is used exclusively today, lead can still be found in the soil.

Where Might Lead Levels Be High?

You should pay particular attention to lead contamination at sites near roads and highways and older buildings. Gardeners who work with soil with a high lead content or children who play in it may breathe in or swallow contaminated soil or dust. Play areas, on the other hand, should not have even a moderate lead content.

Plants grown on soil with high lead levels may have high lead contents. Leaded dust and airborne

lead may collect on leafy greens or other vegetables and will add to a person's lead intake. Daily exposure to lead from soil, dust, air, food and other sources can cause chronic low level lead poisoning in children without causing obvious symptoms.

How Do I Find Out Lead Levels?

The only way to know the lead content of your soil is to test it! The test results will include information telling you what to do about low, medium, high or very high levels of soil lead. Test your soil for lead content and pH. Call your county Cooperative Extension office for soil testing information and sampling kits.

If your garden or play area is near a busy road or a painted building, the soil probably contains lead. Vacant lots where a building once stood may also contain lead. Once a soil is contaminated with lead, it will remain there for over 1,000 years, unless the soil is dug up and safely disposed of.

Generally, most of the lead is in the top three or six inches of soil, depending on whether or not the soil has been mixed by gardening. Removing that layer and replacing it with uncontaminated topsoil will probably get rid of the lead hazard.

Where soil removal is not possible or practical, there are still precautions that you can take to make sure you and your children can garden and play safely. Follow these recommendations to prevent undue lead intake.

Ways to Reduce Lead in Vegetables You Grow

- Locate gardens away from roads and old painted structures if possible, and lay out gardens to keep leafy greens and other hard-to-wash vegetables far from the street. A routine soil test will screen for possible lead contamination.



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- **Add organic material** (composted kitchen vegetable waste, manure, leaves, grass clippings, peat, etc.).

- **Add lime to soil**, using your soil test results as a guide to bring the pH up as close to the range of 6.5 to 7.0 as possible.

- **Discard old outer leaves of vegetables** before eating. Peel root crops before eating. Wash all produce thoroughly.

Ways to Reduce Airborne Lead

If your garden is within 50 feet of a heavily traveled street, your plants could be a risk from airborne lead. Here are some ways to protect your harvest.

- **Plant a hedge** or build a fence to block automobile exhaust.

- **Avoid growing leafy greens** that can accumulate air-borne lead on leaf surfaces (spinach, loose leaf lettuce, herbs, beet greens, collards, etc.).

- **Wash all produce** thoroughly, preferable with a one percent vinegar in water solution (1 to 2 ounces vinegar/gallon water) or soapy water.

- **Lay down mulch** to prevent airborne lead from settling on soil. Discard mulch rather than plowing it in.

Steps to Protect Your Children

If the soil around your home is contaminated with lead, keep young children out of the garden and away from other exposed areas. Here are some other ways to protect children.

1. Take special care with children under six years of age! Have their blood tested regularly. For information, call the Maine State Health and Environmental Testing Lab at (207) 289-2727 in Augusta.

2. Use the good gardening practices. Have play area soil tested for total lead content. Locate play areas away from painted buildings.

3. Build a sandbox (with a bottom) so children can play safely in clean sand.

4. When eating outdoors, eat at a table. Avoid contact of food with soil or dust.

5. Check the grounds around buildings for paint chips. Throw them away where children can't get them. Always use a drop cloth when removing leaded paint.

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6. **Keep dust down:** Plant a tough grass such as fescue. Cover scuff spots under swings and slides with an old carpet or mats. Dampen exposed dusty areas or cover with a thick layer of gravel, bark mulch or other ground covers.

7. Plant hedges or bushes around your home so children will not play where lead accumulation is often greatest.

8. A diet high in calcium and iron and low in fat will promote good health and help prevent the absorption of low levels of lead by the body. Call your county Cooperative Extension office for nutrition information.

9. Keep your home free of dust and soil by vacuuming and wet mopping.

10. Provide clean teething toys, and keep your hands and your child's hands washed, especially before eating and preparing food.

11. Avoid lead exposure if you're pregnant or nursing.

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