Lead and Arsenic in Soil in Former Fruit Orchards

Many of us live on land that was once used for farming. If you live, work or play in an area that used to be an orchard, continue reading to learn more about possible soil contamination and how to protect your health.

How does soil become contaminated with lead and arsenic?

Arsenic and lead in soil can be naturally occurring or may be there as a result of past human activity, such as certain farming practices.

From the 1890s through the 1980s, pesticides that contained arsenic and lead were commonly used to control insects in fruit orchards. Arsenic and lead applied to the land does not go away unless removed.

Historical aerial picture of an orchard.

How do I know if I live somewhere that used to be an orchard?

You can often look through historic aerial photos from your local county. To find them, do a web search for your county's Geographic Information System (GIS) office. You may also find helpful photos at Google Maps or Historic Aerials (URL: historicaerials.com). To access maps at the Historic Aerials website, you will need to create a free account. Neighbors, previous owners, your Michigan County Conservation District (URL: macd.org) or Michigan State University Extension (URL: canr.msu.edu/outreach/ask-an-expert) may also be able to provide helpful historical information.

What are the health effects of arsenic and lead?

Health effects can vary based on how much and how long you were exposed to lead and arsenic.

Arsenic

Health effects of arsenic can include:

- Darkened skin.
- Small corns or warts on palms, soles of feet and other parts of the body.
- Cardiovascular disease.
- A higher chance of skin, liver, bladder and lung cancer.
- Stomach pain.
- Nausea.
- Vomiting.
- Diarrhea.

Lead

Exposure to lead can cause a wide variety of health effects because lead affects almost every organ in the body. Swallowing lead can be a serious issue for children because of lead's effect on developing nervous systems. When lead affects the nervous system, children can experience problems with learning, behavior, speech and hearing. The more lead children are exposed to, the more serious the health effects can be.

Learn more about the ways you can be exposed to lead and possible health effects at bit.ly/lead-and-health.

How can I be exposed to arsenic and lead in soil?

You can be exposed to arsenic and lead by breathing it in or accidentally swallowing it. This can happen if you have soil on your hands and eat or touch your mouth.

What should I do to protect myself and my family?

Limit contact with soil, especially in areas not covered by grass or other vegetation. Discourage children from playing in soil that is not covered by grass, vegetation or mulch.

If you do have contact with the soil or if you garden:

- Wear gloves.
- Wash hands frequently, especially after contact with the soil and before eating.

Don't track soil into your home.

- Leave shoes at the door, especially if you have walked in the soil.
- Wipe your pet's feet off before bringing them into the house.

Should I test my soil or private residential well?

Soil and residential well testing on your property is optional and you will usually be responsible for the cost.

Soil Testing: If you choose to test soil, contact an environmental consultant. Because costs can vary, consider getting several bids. To find an environmental consultant:

- Search the Department of Environment, Great Lakes, and Energy's Environmental Consultant Directory at bit.ly/EGLE-Consultants.
- Ask for a referral from financial institutions, real estate agencies or trade associations.

Residential Well Testing: Even if there is arsenic in soil, there may not be arsenic in drinking water. Contact your local health department to test your drinking water. A list of local Michigan health departments can be found at bit.ly/MiHealthDepartment. Find your closest certified drinking water lab by visiting Michigan.gov/EGLElab and click "Certifications" for a list of laboratories.

If you would like more information about arsenic and lead in the environment, call the Environmental Assistance Center at 800-662-9278 to talk with appropriate technical staff at michigan.gov/egle/contact/environmental-assistance-center.

How can I garden in areas where arsenic and lead may be in the soil?

Vegetables may take in arsenic and lead as they grow, but the bigger concern is soil that sticks to the outside of vegetables. You can limit exposure by washing vegetables before eating them. You can also mulch garden beds to reduce dust and soil from getting on fruits and vegetables.

Other ways to limit exposure while gardening are to:

- Cover walkways with grass, mulch, landscape fabric, stones or bricks to help keep soil off shoes so that you do not accidentally bring soil into your house or car.
- Wear gloves while gardening. Wash hands after gardening and before eating and drinking.
- Build raised beds or container gardens and fill them with soil from a non-contaminated source. If you make a raised bed, use a liner to separate the existing soil from the new soil that you put into the bed. To limit the cost of raised beds, use inexpensive materials like untreated wood or concrete blocks. You can even use smaller containers like plastic pots and make a container garden.

Please call 800-648-6942 to talk with a MDHHS toxicologist if you have questions regarding your health and exposure to lead or arsenic.

Arabic translation

Spanish translation

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