



## Soil Frequently Asked Questions

**I purchased soil from another business in the Portland metro area and my plants are not doing well.**

**How can I tell if it's clopyralid or another problem?**

**How do I know if my soil/compost is contaminated?**

There are many other issues that may arise in the garden that can have an affect on plant growth, like poor plant nutrition. One question is do you see symptoms on susceptible plants? Clopyralid is a broadleaf herbicide and it does not have an effect on all plants.

Clopyralid symptoms usually include poor seed germination; death of young plants; twisted, cupped, elongated leaves. Pictures with symptoms may be seen at:

<https://oda.fyi/ClopyralidDamageVarSpp>

<https://oda.fyi/ClopyralidBeanDamage>

Clopyralid affects many broadleaf plants, but not everything in the garden will show damage. Particularly susceptible plants include legumes (peas, beans, lupine), composites (sunflowers, marigolds, lettuce), nightshades (tomatoes, potatoes, peppers), and buckwheat.

Clopyralid used at the labeled rate does not affect grasses, corn, berries, cole crops (includes cauliflower, brussels sprouts, and kale), tree fruit, or the vast majority of woody and perennial ornamental plants.

**Is there a good contact for other garden questions?**

**I have issues with my plants that do not look like clopyralid symptoms (leaves are not twisted, elongated, or cupped), are there places for me to ask questions?**

There are other issues that may arise in the garden. For example, yellowing of leaves and stunted growth may arise from a nitrogen deficiency. To discuss other garden issues a good resource for home gardeners is: <https://extension.oregonstate.edu/mg/have-gardening-question-ask-master-gardener>.

**How do I know if I received some of the contaminated soil?**

There are several possible options to help you determine whether your soil may contain clopyralid.

- If you already have susceptible types of plants that are planted in the soil, you can examine the plants for signs of clopyralid effects. Signs of the effects of clopyralid include leaf cupping and twisted plant stems. The following web site has several PDF handouts with photos of affected plants:  
<https://puyallup.wsu.edu/soils/clopyralid>. Susceptible plants include legumes (peas, beans, lupine, clover), composites (sunflowers, marigolds, lettuce), nightshades (tomatoes, potatoes, peppers), and buckwheat.
- Gardeners may also try planting susceptible plants in the soil and examining them for clopyralid effects. The following publication describes the steps to conduct a "bioassay" with susceptible plants.  
<https://oda.fyi/ClopyralidBioassay>
- You may also send soil samples to a laboratory for analysis. The following publication includes a list of analytical laboratories that serve Oregon, and some of these laboratories can analyze samples for contaminants. Before you send a sample to the lab, ODA recommends contacting the lab to confirm the lab can test plants for clopyralid. (Note that lab results may not confirm lack of clopyralid below the detection limit.)

## **Is there a lab that can test my soil or compost for clopyralid?**

For a list of private labs please see: <https://oda.direct/AnalyticalLabsServingOregon>

You may need to contact the laboratory to confirm with the lab that they still perform such work. (Note that lab results may not confirm clopyralid if it is below the detection/quantitation limit. A bioassay is the best method to determine if clopyralid is present at levels that will affect your crop.)

Please keep in mind that some testing fees can be expensive, and labs are unlikely to interpret results if clopyralid is found. At this time, testing fees would be the responsibility of the homeowner. ODA is not able to reimburse for testing fees.

## **If I send a soil sample to a laboratory, will they be able to detect it at the same low level that ODA's lab detected it?**

You will need to ask the lab to see if their methodology has the ability to report to that level. This is sometimes dependent upon the equipment that they have. Here are some questions for a private lab.

1. ODA's lab reported out with a method reporting limit of 0.010 parts per million (ppm) or 10 parts per billion (ppb). Would you be able to provide lab results with a quantitation limit of at least 10 ppb or lower? The matrix is compost/soil.
2. How much sample material would you need to do the analysis?
3. Do you have any recommendations on how I should sample my compost/soil when I collect the sample to make sure what I send you is representative?

Labs are often great resources for helping customers collect a representative sample.

## **What other tests are available?**

You can conduct a test by planting susceptible plants in the soil and examining them for clopyralid effects. The following publication describes the steps to conduct a "bioassay" with susceptible plants.

<https://oda.fyi/ClopyralidBioassay>

Susceptible plants include legumes (peas, beans, lupine, clover), composites (sunflowers, marigolds, lettuce), nightshades (tomatoes, potatoes, peppers), and buckwheat. **This is the only sure way to know if your soil has levels of clopyralid at levels harmful to your plants.**

## **I have fruits, vegetables and herbs growing in some soil that I received from one of the distributors. Are they safe to eat?**

## **Should I be worried about my children and dogs playing in the soil?**

## **I run a small farm and sell produce to people/CSA members. What should I tell my customers about plants/products I've sold while using these \*potentially\* contaminated soils?**

### Pesticides and Risks

Many people believe that some pesticides are "safe," while others are "dangerous." Because of this, pesticides are best explained using the term risk instead of safe. Because plants can show symptoms when there are very small amounts of clopyralid, plant damage may not mean there is a health risk. Clopyralid is considered very low in toxicity if ingested. It is currently used in agriculture to control weeds for several crops. Based on an analysis of health risks, the U.S. EPA allows residues of clopyralid on certain food crops. This is called a "tolerance", or a legal allowable residue limit. Clopyralid is considered very low in toxicity via skin exposure<sup>1,2</sup>.

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<sup>1</sup> Clopyralid. Health Risk Assessment for New Uses on Apples, Teff, Brassica Leafy Greens, and Rapeseed; U.S. Environmental Protection Agency, Office of Chemical Safety and Pollution Prevention, U.S. Government Printing Office: Washington, DC, 2012

<sup>2</sup> Human Health Risk Assessment, BLM Vegetation Treatment Using Herbicides; U.S. Department of the Interior, Bureau of Land Management: Washington, DC, 2014

Considering plants may show symptoms even at very small amounts, touching soil presents a low risk to gardeners.

### **Has this ever happened before?**

Clopyralid in compost has been an issue in the past. It has been enough of an issue that in 2003, ODA issued rules prohibiting clopyralid use outside of a few specific types of sites. On sites where clopyralid use is still allowed, grass clippings or other material from a treated site are prohibited for use in compost.

### **Why is clopyralid used?**

Clopyralid is the common name of an herbicide that kills broadleaf weeds such as dandelions, clover, and thistle. It has long lasting effects against target weeds when applied at low rates. Clopyralid has low toxicity to humans and animals. Trade names for products containing clopyralid include: Confront, Curtail, Redeem, and Stinger.

### **How does soil/compost get clopyralid in it?**

Clopyralid breaks down very slowly during the composting process, especially if temperatures are not adequately high. Some manure composts may present a risk to susceptible crops. If animals eat large amounts of feed (such as grass hay) containing clopyralid, high levels of clopyralid may result in the manure. Straw bedding may also be contaminated with clopyralid.

On sites where clopyralid use is still allowed, grass clippings or other *material from a treated site are prohibited for use in compost*. ODA is conducting an investigation to try and find how treated material was introduced into the compost.

### **How long does clopyralid take to break down in the soil? Will it break down faster if I leave it exposed to air, rain, etc., or is it OK to cover it up?**

Clopyralid will eventually break down, but the exact time of breakdown is variable depending upon the environmental conditions and the initial amount in the soil. Soil microbes assist in breaking down many herbicides. Thus warm, moist, fertile soil that favors the growth of the soil microorganisms will subsequently assist in the breakdown. In other words, leaving the product exposed to the elements in a healthy soil microbe environment is likely to make the breakdown process occur faster.

To confirm that clopyralid has broken down, we recommend conducting a bioassay (addressed elsewhere in this FAQ)

### **How do composters control this issue?**

Some composters established bioassay and analytical testing programs to evaluate each lot of their product to determine if it is suitable for sale to gardeners. Contact your local composter for more information on their procedures and products.

### **What is a Report of Loss Form?**

Those affected may submit a Report of Loss (ROL) form to ODA. The submission of the ROL reserves the citizen's right to pursue civil action if they wish to do so. Filing the ROL report does not mean that one has filed a claim, as that would need to be done in a civil suit, but it is a step that must be done if a party chooses to pursue civil action. ODA cannot act as your legal counsel. If you have questions concerning your legal rights, you should contact an attorney.

The form is available at: <https://oda.direct/ReportAllegedLossPesticidesForm>.

## **I have affected plants and I would like to dispose of my soil?**

How can I dispose of the contaminated soil? Will the distributor come get it?

You may contact the business where you purchased the contaminated soil regarding options. Another disposal option is to contact Metro at the locations below.

Those affected may want to have their soil removed. ODA does not have the authority to require companies to remove soil from clients' homes. In order to avoid further contamination, soils that are believed to be contaminated should NOT be taken to your local compost or yard debris facility. These soils can be disposed of at the locations below. Please inform the facility that this soil is thought to be contaminated.

1. Metro South in Oregon City, 503-234-3000 for hours, pricing, and additional information
2. Hillsboro Landfill, 503-640-9427 extension 0, for hours, pricing, and additional information.

Metro cannot pick up the soil but can discuss where you can take the soil if you have a way to haul it off of your property.

## **Is there financial assistance for soil removal available?**

Ongoing discussions with partner agencies on financial assistance options are currently being discussed and will be shared if some become available. Community members can contact the business where the soil was purchased to find out what options might be available. Unfortunately, there is not any financial assistance available from ODA to help pay for the removal. One option is for gardeners to avoid using the soil for several months to allow the clopyralid to break down or alternatively move the soil to a part of the property that does not have susceptible plants. Then, before using the soil, gardeners can test it by planting susceptible plants and watch for effects.

## **I have already rototilled the soil into my garden. Should I plant anything in it?**

Before you plant other garden plants into your soil, you may want to consider conducting a bioassay (planting susceptible plants into the soil and observing potential affects). On how to conduct a bioassay see: <https://oda.fyi/ClopyralidBioassay>

Susceptible plants include legumes (peas, beans, lupine, clover), composites (sunflowers, marigolds, lettuce), nightshades (tomatoes, potatoes, peppers), and buckwheat.

## **Where can I learn more about this topic?**

Other resources: <https://puyallup.wsu.edu/soils/clopyralid/>

## **What is ODA doing to prevent this from happening again?**

ODA developed a pesticide advisory distributed broadly to pesticide users and pesticide dealers to increase awareness of this issue. We are collaborating with other agencies and organizations to distribute this information.

## **Can ODA come sample my soil?**

We greatly appreciate the offers of sample material but we are not in need of any additional samples at this time. Currently ODA has collected enough soil/compost product samples for its two investigations (# 200405 – Dean Innovations / # 200408 – McFarlane's). ODA is now working with the two companies to help look into the source material that went into making the product to try and find the root of the problem.

If you have additional information regarding this matter that information may be provided in an email to [contaminatedsoilquestions@oda.state.or.us](mailto:contaminatedsoilquestions@oda.state.or.us) where it then can be included with the case file. Regardless of whether we obtain a sample from your soil please e-mail us with your information so we can add it to the case file and add you to the email update list.

## How can I stay up to date on ODA's investigation?

Updates and other information will be posted on the following website:

<https://oda.direct/PesticidesCurrentIssues>

We have also created a specific email address for this matter to help answer questions and will provide email updates to interested parties. You may email [contaminatedsoilquestions@oda.state.or.us](mailto:contaminatedsoilquestions@oda.state.or.us) and ask to be included on an email list for updates for case #200405 and #200408. Questions sent to [contaminatedsoilquestions@oda.state.or.us](mailto:contaminatedsoilquestions@oda.state.or.us) will be monitored and responses consolidated into this FAQ sheet.

## What's Next?

ODA's Pesticides Program currently has an open active investigation trying to find how treated material was introduced into the soil/compost. On sites where clopyralid use is still allowed, grass clippings or other material from a treated site are prohibited for use in compost. Dean Innovations and McFarlane's should not have received any material treated with clopyralid and have both been very cooperative with ODA in trying to find how this issue arose. ODA Pesticides Program is now working with both companies to help look into their source materials for the why and how.

In addition, ODA's Fertilizer Program registers agricultural amendment and plant nutrient products and will be working with the companies to help ensure moving forward issues do not arise into the future.

## Additional resources you might find useful:

Below are links to additional resources you may find useful:

- OSU Extension, Herbicide carryover in hay, manure, compost and grass clippings: <https://oda.fyi/HerbicideCarryover>
- North Carolina Extension: <https://oda.fyi/HerbicideCarryoverNCState>
- Improving Garden Soils with Organic Matter: <https://oda.fyi/ImprovingSoilsOrganicMatter>
- Soil Test Interpretation Guide: <https://oda.fyi/SoilTestInterpretation>
- Fertilizing Your Garden: <https://oda.fyi/GardenFertilizing>
- OSU Extension, Raised Bed Gardening: <https://oda.fyi/RaisedBedGardening>