



Simple, no-cost tests for blue-green algae

Use a jar or stick to check for blue-green algae in your lake or pond.

Adapted with permission from the Kansas Department of Health and Environment

A couple simple and free tests can help to determine if a lake has a blue-green algae community. The Minnesota Pollution Control Agency (MPCA) does not routinely monitor for algal toxins. If your test results indicate you have a blue-green bloom, please refer to the [Blue-green algae and harmful algal blooms page](#) on the MPCA website for tips to reduce the risk of exposure by your family and pets. Contact the MPCA's Water Quality Monitoring Line (651-757-2822) with questions about blue-green algae or the results of your tests.

If you think you or your pet have been exposed to blue-green algae toxins, contact your health care provider or veterinarian. Report any illnesses where the suspected cause is blue-green algae toxins to the Minnesota Department of Health Foodborne and Waterborne Illness Hotline (877-366-3455 or health.foodill@state.mn.us).

Note: No test for blue-green algae is perfect, including these. The jar test relies on the buoyancy of most free-floating blue-green algae. In Minnesota, most bloom complaints are the result of the buoyant forms. But there's a small possibility that the algae in your test may be a non-buoyant species, resulting in a false negative. Likewise, some swimming forms of non-blue-green algae (such as euglenoids) may form a surface layer during a jar test, resulting in a false positive. Euglena blooms are often reddish, rather than green.

The presence of blue-green algae does not mean your lake is hazardous; they are a natural part of the algae communities in Minnesota lakes. Although the jar test can confirm blue-green algae, it does not indicate the algae species or if the bloom is toxic. Hazardous conditions occur when there is a large amount of blue-green algae composed of species capable of generating toxins. A chemical test for toxins would be required to confirm hazardous conditions.

The jar test

If your lake or pond water appears very green, the jar test can help determine if the color is from blue-green algae, or just an overabundance of more beneficial types of planktonic algae.

Materials

- Clear jar (pint to quart size) with a screw top lid, such as a canning jar or pickle jar with label removed
- Rubber or latex gloves

Procedure

1. With the gloves on, collect a sample just below the surface of the water (avoid collecting just the top layer of scum).
2. Fill the jar about three-quarters full. Do not fill the jar completely; algae give off gases that may cause pressure buildup in the jar that could break it.
3. Wipe any scum off the outside of the jar and screw the lid on.
4. Put the jar in the refrigerator and leave it undisturbed overnight.
5. Carefully remove the jar from the refrigerator and see where the algae has accumulated. Do not shake or agitate the jar at all or the algae will mix into the water again and negate your test results.



6. If the algae are settled out near the bottom of the jar, it is likely that your lake does not have a lot of blue-green algae.



7. If the algae have formed a green ring at the top of the water, there is a strong possibility that your lake does have a blue-green algae community.



The stick test

If your lake or pond has a mat of green material floating on the surface, the stick test can help determine what it is.

Materials

- Sturdy stick, long enough to reach into the water without getting algae on your hands
- Rubber or latex gloves

Procedure

With the gloves on, push the stick into the surface mat and slowly lift it out the water. If the stick comes out looking like it has been dipped into a can of paint, the material is likely blue-green algae. If the stick comes out with green strands like hair or threads, the material is probably filamentous green algae, which may be a nuisance but is not a health hazard.



Filamentous algae

Note:

The stick test can fail when a type of blue-green algae called *Lyngbya wollei* is present. This species can form tough filamentous mats that float to the surface, similar to mats formed by harmless filamentous algae. But *Lyngbya wollei* algae differentiate themselves with a putrid sewage-like odor and by sometimes releasing purple pigment in the water around them.

