

6 Homemade herbicides: Kill the weeds without killing the Earth



[Derek Markham](#) (@derekmarkham)

[Living / Lawn & Garden](#)

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It's been said that weeds are just plants whose virtues have not yet been discovered, but if you're tired of waiting to find out what those virtues are, you might want to use one of these homemade herbicides instead of the chemical versions.

Many common weeds can be either food, medicine, or unwanted visitors to the garden, depending on the varieties and how you view them. But if you've [eaten all of them you can](#), and you still need to get rid of weeds in your yard, it's far better for you, your soil, and your local waterways to choose a more environmentally friendly herbicide than those commonly found in the home and garden center.

Strong chemical herbicides, pesticides, and fungicides can end up polluting our drinking water, our groundwater, and surface water, so it's important to consider the longer term effects of using them, and to instead make the choice to use a gentler herbicide, which won't contribute to [the larger issue of water contamination](#).

The most environmentally friendly way to get rid of weeds is to pull them up, dig out the roots, let them dry in the sun, and then add them to a compost or mulch pile. However, that method can also take quite a bit of time, so if you're looking for a quicker way to effectively get rid of weeds, one of these homemade herbicides might be the way to go.

[N.B.: Just because these are 'natural' or homemade herbicides, that doesn't imply that they couldn't harm your soil, your garden, or your person. An herbicide is a "substance that is toxic to plants," which means that your garden plants are just as susceptible to these treatments, they could have a negative effect in the soil if applied in large quantities, and they may cause human injuries if misused.]

Drench with boiling dihydrogen monoxide:

This homemade herbicide is by far the simplest to prepare, and unless you happen to spill boiling water on yourself, is also the least harmful to both people and the environment. Simply bring a big pot of dihydrogen monoxide (that's a fancy way of saying water) to boil on your stove, and then pour it over the leaves and stems of the weeds you wish to get rid of. Using boiling water is an effective method for killing weeds in places such as sidewalk or driveway cracks, or over a larger area that you'd like to replant after the weeds are gone, as it doesn't leave any residue or have

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Perennial biofuel crops' water consumption similar to corn

Jul 06, 2015

Physics.org www.phys.org

Converting large tracts of the Midwest's marginal farming land to perennial biofuel crops carries with it some key unknowns, including how it could affect the balance of water between rainfall, evaporation and movement of soil water to groundwater.

In humid climates such as the U.S. Midwest, evaporation returns more than half of the annual precipitation to the atmosphere, with the remainder available to recharge groundwater and maintain stream flow and lake levels.

A recent study from the Great Lakes Bioenergy Research Center and published in *Environmental Research Letters* looks at how efficiently "second generation" biofuel crops - perennial, non-food crops such as switchgrass or native grasses - use rainwater and how these crops affect overall [water](#) balance.

The study, led by Michigan State University professor of ecosystem ecology and GLBRC scientist Stephen Hamilton, is the first multi-year effort to compare the water use of conventional corn crops to the perennial [cropping systems](#) of switchgrass, miscanthus, native grasses, restored prairies and hybrid poplar trees.

"When we established the different cropping systems in 2008," Hamilton said, "we installed [soil-water](#) sensors at various depths through the root zone. We've been continuously monitoring the soil water content ever since."

Hamilton uses the soil-water sensors to measure the rate of evapotranspiration occurring within each cropping system. Evapotranspiration refers to the sum total of water lost while the plant is growing, either from transpiration, which is evaporation through the plant stem itself, or from water evaporated off of the plant's leaves or the ground. By measuring the amount of precipitation that has fallen against actual soil water content, it's possible to quantify the water lost to evapotranspiration while each crop is growing.

Hamilton's team reports that the perennial system's evapotranspiration did not differ greatly from corn - a finding that contrasts sharply with earlier studies that found particularly high perennial water use in areas with high water tables. Hamilton's study, however, took place in Michigan's temperate humid climate and on the kind of well-drained soil characteristic of marginal farming land.

"The message here," Hamilton said, "is that in many settings, perennials may not use more water. For well-drained soils in the upper Midwest at least, and probably for eastern North America in general, these results most likely apply, and water balance would not be adversely affected."

Though the study has clear implications for cellulosic, or second-generation, biofuel production in the Midwest, Hamilton says it touches more broadly on some of the expected effects of climate change as well.

Since the evapotranspiration rates of the study's cropping systems held steady across several years of varying precipitation levels, the study also suggests that crop evapotranspiration rates may not be as sensitive to climate change as is currently assumed.

"Our observation that plants use roughly the same amount of water regardless of water availability suggests that a warmer or longer growing season may have a relatively small effect on evapotranspiration and thus could affect landscape water balances less than we previously thought," Hamilton said. "Other changes in climate-driven aspects of the water cycle, such as intense rain events, less snow or shorter periods of ice cover on lakes, may have a much larger effect on groundwater, stream flow and lake levels."



Michigan State University research shows that perennial crops' evapotranspiration did not differ greatly from corn -- a finding that contrasts sharply with earlier studies. Credit: MSU

(Homemade Herbicides, cont...) any harmful long-term effects. As with all of these homemade herbicides, it's still important to only apply it to the plants you wish to get rid of, as they can easily also kill your flowers or vegetable plants.

Drench with boiling dihydrogen monoxide: This homemade herbicide is by far the simplest to prepare, and unless you happen to spill boiling water on yourself, is also the least harmful to both people and the environment. Simply bring a big pot of dihydrogen monoxide (that's a fancy way of saying water) to boil on your stove, and then pour it over the leaves and stems of the weeds you wish to get rid of. Using boiling water is an effective method for killing weeds in places such as sidewalk or driveway cracks, or over a larger area that you'd like to replant after the weeds are gone, as it doesn't leave any residue or have any harmful long-term effects. As with all of these homemade herbicides, it's still important to only apply it to the plants you wish to get rid of, as they can easily also kill your flowers or vegetable plants.

Light 'em up with fire: The application of direct heat to the foliage of weeds will cause the plants to immediately wilt, and repeated applications will kill any leaves that may resprout from the roots. A flame-weeder tool is available from home and garden stores, which allows you to apply flame and heat directly to the weeds without catching the whole neighborhood on fire. In fire-prone areas, weeding with flame needs to be done with some extra precautions, as dried weeds and grasses can easily catch fire and get away from you.

Douse with sodium chloride: Sodium chloride, or common table salt, is an effective herbicide, and has some historical notoriety for possibly being used to lay waste to the soils of conquered peoples (salting the fields prevents plants from growing there). Because salt can have a detrimental effect in the soil, it's important to only apply it directly to the leaves of the weeds, and to not soak the soil, especially in garden beds with other, more desirable, plants. Dissolve 1 part salt in 8 parts hot water (it can be made stronger, up to 1 part salt to 3 parts water), add a small amount of liquid dish soap (to help it adhere to the leaf surfaces), and pour into a spray bottle. To apply, cover or tie back any nearby plants you don't want to kill, then spray the leaves of the weeds with the solution. Be careful to not soak the soil, and keep this mixture away from cement sidewalks or driveways (it may discolor them). Multiple applications may be necessary.

Pickle 'em with vinegar: OK, so it's not exactly pickling, but by applying this common household item, white vinegar, to weed leaves, they'll die off and make room in your yard for more desirable plants. The white vinegar sold in grocery stores is about 5% acetic acid, which is usually strong enough for most weeds, although a more industrial strength version (up to 20% acetic acid, which can be harmful to skin, eyes, or lungs) is available in many garden supply stores. The vinegar can be applied by spraying full strength onto the leaves of the weeds, being careful to minimize any overspray on garden plants and nearby soil. Repeated applications may be necessary, and the addition of a little liquid dish detergent may improve the effectiveness of this homemade herbicide.

Season them like chips: Another common homemade herbicide recipe calls for combining table salt or rock salt with white vinegar (1 cup salt to 1 gallon vinegar), and then spraying this mixture on the foliage of weed plants. Adding liquid soap is said to help the efficacy of this weedkiller, as is the addition of certain oils, such as citrus or clove oil.

Harness up the 20 mule team: Borax, which is sold as a laundry and cleaning product in many grocery stores, might not actually get transported by a [20 mule team](#) anymore, but it could help lend a hand in the yard as an herbicide. Add 10 ounces of powdered borax to 2.5 gallons of water, mix thoroughly, and use a sprayer to coat the leaves of unwanted weeds in your yard. Keep overspray off of any plants you want to keep, avoid saturating the soil with the solution, and avoid contact with bare skin.



We are hosting another Project WET (Water Education for Teachers) workshop on Oct. 30th. This will be a basic workshop but will be targeted toward the interests of the attendees for more effective implementation at your site.

Learn about the many faces of water resources with the 200+ activities of Project WET. This workshop will integrate indoor and outdoor learning to get your students or visitors better acquainted with their local water resources.

To host or attend a Project WET (Water Education for Teachers) Certification Workshop, please contact the Indiana Dept. of Natural Resources -Project WET State Coordinator at projectwet@dnr.state.in.us or contact the Allen County Partnership for Water Quality/Project WET Facilitator, Matt Jones. You may contact him directly at:

matt.jones@one.usda.gov or 260/484-5848 x 3

(Science and Ed., Con't.)

Officials celebrate completion of Maumee Bay restoration project

Environmental Issues // May 29, 2015

Dredging News Online

A publication for the worldwide dredging industry published by Clarkson Research

Congresswoman Marcy Kaptur (OH-9), University of Toledo (UT) Interim President Nagi Naganathan, UT Professor of Environmental Sciences Dr Daryl Dwyer and representatives from local governments and environmental groups have celebrated the successful completion of a wetland restoration project at Maumee Bay State Park in Oregon, Ohio.

"Today we celebrate a major victory in our shared fight to restore Lake Erie's water quality," said Rep Kaptur. "The results we are seeing from these projects show the impact we can have when we put good science to work protecting the health and safety of our communities and our critical ecosystems.

"These investments in our precious Maumee watershed have brought partners from across Northwest Ohio together to make a difference. Thanks to this work, we are seeing clear positive results today that will help keep pollutants out of Lake Erie and limit the threat of harmful algal blooms. The successes and lessons learned through these projects will also help direct similar initiatives in the future."

The project was undertaken through two Great Lakes Restoration Initiative grants totaling US\$1.8 million. The project titles were 'Passive Treatment Wetland to Improve Nearshore Health and Reduce Nonpoint Source Pollution' and 'Reduction of Sediment and Bacteria Loadings to Public Beaches at Maumee Bay State Park via Enhanced Riparian Habitat.'

The projects included the addition of a sedimentation pond in Wolf Creek and a treatment wetland at Maumee State Park that will filter out Escherichia coli (E-coli) bacteria and phosphorus pollutants before runoff water enters Lake Erie.

Early results from UT show water quality improvement has been better than expected, with a 94 per cent reduction in E coli bacteria and a 50 per cent reduction in total phosphorus at the site of the wetland improvements. UT researchers are investigating sites throughout the Maumee River watershed where they could replicate the project and help prevent nonpoint source pollutants from entering Lake Erie.

Are Beards Really The Latest Victim Of Fecal Pollution? By [Sara Jerome@sarmie](mailto:Sara.Jerome@sarmie)

For some men, reports this month about the latest victim of sewage pollution cut close to the bone — specifically, the jawbone.

In May, "a foul and disgusting idea surfaced, one of those things you wish you could instantly unlearn: Men's beards are, it seems, crawling with poop particles," New York magazine [reported](#). Thankfully, this claim has since been debunked.

The story [originated](#) with KOAT Albuquerque: "A handful of brave men allowed Action 7 News to swab their beards, and the results showed some beards are as dirty as toilets," the report said.

The New York Post [reported](#) the same story: "Microbiologist John Golobic, of Quest Diagnostics, swabbed a number of beards searching for bacteria for the study and found that some of the bacteria 'are the kind of things that you find in feces.'"

Additional news headlines, [cited by](#) The Guardian, included:

"Some beards contain more poo than a toilet shocking study reveals" — [The Mirror](#)

"Shock new research reveals some beards contain more poo than a toilet" — [news.com.au](#)

"Some beards are so full of poo they are as dirty as toilets" — [metro.co.uk](#)

The thing is, the findings are not what the Internet has made them out to be. The Guardian cleared this up.

"There was no proper study, no team of microbiologists and no poo in beards. While it is true that human feces are partially composed of gut bacteria, it's not accurate to describe those bacteria on their own as feces. Further, even if this was a properly conducted scientific study with a large number of samples and published in a reputable journal, there wouldn't necessarily be any cause for concern," the newspaper said.

Focusing on feces in beards is off-the-mark, according to Phillip M. Tierno, a microbiologist at New York University and the author of *The Secret Life of Germs*.

"We, as a society, are literally bathed in feces," Tierno said, per New York. "Wherever a man touches, there are feces and fecal organisms present."



Image credit: "Beard," Mike Mozart © 2013, used under an Attribution 2.0 Generic license: <http://creativecommons.org/licenses/by/2.0/>

Water Matters [HOOSIER RIVERWATCH](#) –The ACPWQ is now an approved facilitator for this program. Established by our partner, the St. Joseph River Watershed Initiative (SJRWI), this program has been idle since the retirement of our long-time facilitator and friend, Jerry Hohla.

We held our first training in June and certified 9 new volunteers.

We anticipate expanding this self-reporting, citizen-science program.

We are holding another basic certification workshop on October 23rd before the waters get too cold for general sampling.

If you wish to be a part of this wonderful and fun citizen-science program, then contact our office at: 260-484-5848 x 3 or email us at matt.jones@one.usda.gov.



If you are already certified, then you can borrow one of our two Loaner Trunks for your monitoring pleasure. These loaner trunks are available for those of you interested in monitoring in or around the North-northeast part of Indiana. We will assist you in determining your sampling site and access to loaner trunks.

NEW HAVEN RESIDENTS!!!

Take full advantage of the **Allen County SWCD Rain Barrel Cost-Share** program.



Rain barrels collect FREE rainwater from your own downspouts. This water is naturally pH neutral and typically nutrient rich.

You can do your part to help slow runoff from your rooftops to the rivers.

Buy and place a barrel and get 75% of your cost (up to \$100) back from your purchase!!!

This is part of the Upper Maumee River Watershed Implementation Program.

Contact the Allen County SWCD for more details and qualification at

www.allenswcd.org or 260-484-5848 x 3



In an effort to rank, in the order of importance, the ten major environmental issues facing the Great Lakes, the staff at the GLRC asked 28 stakeholders in the Great Lakes basin to rank the major issues affecting the Great Lakes. The Environment Report then sent out a team of reporters throughout the region to explore these issues in-depth. The result of efforts that have continued to be broadcast on public radio stations since October, 2005.

This series is made possible in part by the [Joyce Foundation](#) and the [Healing Our Waters Campaign](#). (continued in the next newsletter)



8) [Air pollution deposition](#)

Air pollution deposition comes from various sources, including smokestacks, fires, pesticides, and automobile emissions. Chemicals and compounds that are sent into the air from these sources fall back down to earth directly or via precipitation.

Hopefully you are already aware of the 2015 Pesticide Clean Sweep Project sponsored by the Indiana State Chemist's Office that will be going on in various counties across Indiana in August.

This is a great way for people (private, farmers, ag dealers, schools, nurseries, golf courses, cities, towns, municipalities and county units of government or others) to dispose of suspended, canceled, banned, unusable, opened, unopened or just unwanted pesticides (free up to 250 pounds per participant). Those wanting to participate are required to complete and submit a planning form by mail, e-mail or fax by Monday, July 30, 2015 to Kevin Neal.

If needed, refer to the information document at:

http://www.oisc.purdue.edu/pesticide/2015cleansweep/2015_clean_sweep_letter.pdf

The drop off time is 9:00 a.m. to 3:00 p.m. (local time) and the dates and locations are:

August 18, 2015: Miami County Fairgrounds in Peru, IN

August 19, 2015: Elkhart County Fairgrounds in Goshen, IN

August 20, 2015: Randolph County Fairgrounds in Winchester, IN

August 26, 2015: Decatur County Fairgrounds in Greensburg, IN

August 27, 2015: Hendricks County Fairgrounds in Danville, IN

See the Office of Indiana State Chemist (OISC) website at:

http://www.oisc.purdue.edu/pesticide/2015cleansweep/2015_clean_sweep_form.pdf to download the planning form. The planning form has a submission deadline of 7/30/15 to Kevin Neal to participate.

Upcoming Events:

Day at the Lake – Aug. 18/Sept. 23
Location: *Stone Labs, Put-In-Bay, OH*
Science of water quality on L. Erie

Huntertown Heritage Days -Sept. 11-12
Location: *Huntertown, IN*
Help celebrate by stopping through our ACPWQ display.

Johnny Appleseed Festival -Sept. 18-19
Location: *Johnny Appleseed Park, FW, IN*
Visit w/Dr. I.C. Coldwater and the ACPWQ

EEAI Conference -Sept 25-27
Location: *Indiana Dunes Learning Ctr.*
Excellent environmental Ed. opportunity in a great location-the Great Lakes!!!

Hoosier Riverwatch Workshop -Oct. 23
Location: *TBD*
Science to learn about your local stream.

Project WET Certification -Oct. 30
Location: *TBD*

Last Words: **A river is the report card for its watershed.**

-Alan Levere



“Dr. I.C. Coldwater” [Ian Caldwell Coldwater](#),

“Cause” [Allen County Partnership for Water Quality](#)

Questions or comments? Please contact matt.jones@one.usda.gov or call 260/484-5848 x 111

For additional water quality links and resources, please visit: www.acwater.org