

There's Power in Leaves by Liza Field 9 Nov 2014 *Virginian-Pilot*

To fix the planet, it's often said that humans need to turn over a new leaf. But old leaves also work. And they can turn themselves, if we let them, into life. They're partially responsible for good topsoil, native microbes, beneficial insects and songbirds, healthy plants, water conservation, insulation during weather extremes - even human happiness. If you don't believe me, just put down the leaf blower a minute and hear the quieter news equipment ads won't tell you.



We're talking humus, the life-giving compost. By nature's design, this humus would be in renewal mode now, in late autumn. All around us, myriad unseen microbes would be turning this year's leaf litter and pine straw into the humble, lowly magic carpets that later take wing, transformed into sweet cherry blossoms, wood thrush music and floating summer fireflies.



Even as these humble magic carpets are swept up across the developed world, researchers keep uncovering more of their astonishing benefits. Euphoria, for example. A simple rug of humus underfoot can make a person smarter, happier, healthier and just plain glad to be alive. Walk through an Eastern hardwood forest - or your local patch of unraked leaves - and inhale. The musty, great old-library air exuded by leaf decay comes partly from the compost-dwelling bacteria, *M. vaccae*. These tiny microbes are one big reason that hours spent in a woodland or compost-rich garden profoundly elevates human mood, especially compared to time spent in lawn, asphalted

or indoor settings. Humus-rich landscapes are linked to profoundly raised serotonin levels in laboratory mice and humans, along with decreased depression, blood pressure, anxiety and stress hormones. You get a dose of this mind-sharpening mood-lifter when raking leaves. But if you then banish those leaves to a landfill, burn-pile or municipal compost, you and your neighbors (and pets and wildlife) lose a powerful antidepressant - the kind with no side effects. In fact, organic humus triggers so many happy side effects it's a marvel we ever thought to waste it.

Native humus provides a vigorous microbial community for trees and plants. It serves as a vast digestive tract and immune system that turns death into life, pathogens into nutrients. Native humus is teeming with pathogen-fighting microbes, inoculating and nourishing the surrounding plants. Eradicating it mechanically or steeping the land in chemical biocides is like wiping out human gut flora with antibiotics. Humus also feeds the grubs, insects and larvae that nourish migratory songbirds, whose plummeting populations need this kind of habitat. These birds protect trees and their ecosystems from parasite imbalance. It's one reason that conservationists urge homeowners to leave some portions of the yard as humus, where worm-and-insect-eating birds can "scratch" for food.



Aside from feeding plants and wildlife, humus also hydrates the place, filtering, absorbing and housing rain and snowmelt. It then creates a permeable, insulating lid to slow groundwater evaporation during dry spells. A recent three-year study of potato crops in Maine showed compost-amended, non-irrigated plants yielding harvests equal to those of irrigated crops. This means that humus, left on the land, could significantly conserve time, money and food costs - along with our increasingly scarce water supplies. And it would keep those precious waters cleaner. After all, drugging depleted soils with inorganic fertilizers and biocides, as the ads teach us to do, can't begin to regenerate the soil nutrients and loft that humus creates. Then, because compacted, impoverished, uninsulated soil dehydrates easily, we have to douse lawns with gushers of chlorinated water - itself harmful to native soil microbes and quick to evaporate. Factor in the compost-shriven land's inability to absorb rains that do fall, and fertilized storm water ends up in street-gutters, creeks and rivers, causing the kind of toxic algae blooms downstream that affect the Chesapeake Bay every summer.

A return to humus landscaping - in fields, parks, campuses and your yard - could powerfully help redeem things on every level. If that prospect doesn't lift your spirits, go stand in those autumn leaves and breathe. Relief, health and big reasons for hope are waiting right under your feet.

Liza Field teaches in Virginia, where she also hikes old mountains and doesn't rake leaves. Distributed by Bay Journal News Service. Photos by Suditi, taken in Croatan, Provided generously by Nature.

