

**DAHLIA SOCIETY OF GEORGIA  
APRIL NEWSLETTER & MEETING NOTICE**



**BADGER TWINKLE M-SC-DB PR/WH  
PROPOSED FLOWER OF THE YEAR**

**APRIL MEETING**—The April meeting will be Monday, April 20th and will begin at 7:30 PM, in the Garden Classroom in the basement of the main building of the Atlanta Botanical Garden. If you haven't been to one of our meetings before here are some directions to the basement.

After leaving the entrance building, come up the hill and guide right and go around the large fountain. On the right are a set of double doors and you can walk down a flight of stairs to the basement. An elevator is available through the double doors on the left side of the fountain.

The Garden is closed on Monday to regular patrons but is open for the Dahlias Society meeting and sale and the general public is invited to join us.

**APRIL PROGRAM:** Spring tuber sale. We will have a good supply of tubers available to members and visitors to purchase during the course of the evening. These will be mostly locally grown tubers that we know will grow in our climate conditions. There will be dinnerplate dahlias (up to 12") to Pom dahlias which are only 2" in diameter and everything in between. We will have growing guides available and lots of experienced growers to help answer any questions you may have. We will start with a fun auction of the Giant, Large and Medium sized dahlias. After that the tables will be open for the selection of other tubers and all will be sold for \$3 each. Come to the April tuber sale.

**MEMBERS:** Please bring your tubers for the sale. They must have a visible eye, listed in the Dahlia Classification Book in the past two years or in the Composite Classification Book. The name of the tuber must be written on the tuber or a name tag attached. Please come early to the sale so we can place the tubers in the proper location on the tables.

**ADS REGIONAL VP**—Ray Phillips (Tennessee DS), the current ADS Regional VP for the Southern States Dahlia Conference, announced his retirement from the position at the recent Southern States meeting held in Chattanooga in March. We want to thank Ray for his service in this capacity during the last two years.

The Southern States Societies are now actively seeking candidates to assume the role of ADS Regional VP. Each Society is requested to submit names of members interested in this position so a decision can be made at the next Southern States meeting in Birmingham in early October. Anyone interested should contact their Society President for further information.



**IVORY PALACES AA-ID-Y A THREE YEAR OLD PLANT GROWING IN FULL SUN IN THE BACK-YARD OF A FRIEND OF MINE ACROSS FROM THE TEE BOX FOR THE 5TH HOLE (UPPER LEFT). NO DISBUDDING SO MANY SMALLER BLOOMS FOR CUTTING ALL SUMMER.**

The article below was taken from the website of Dr. Joseph Mercola, Mercola .com which is an outstanding daily Health Newsletter that is free to anyone that would like to join. This article is helpful to anyone who grows dahlias or anything else.

## “SOS: Save Our Soil” Shows Innovative Approaches to Sustainable Agriculture

By Dr. Joseph Mercola

“The nation that destroys its soil destroys itself.”

—Franklin D. Roosevelt, 1937

America has not heeded the warning Roosevelt issued nearly 80 years ago. Precious soils are being decimated daily by misguided reliance on industrialized agriculture and synthetic chemicals, which disrupt its delicate ecosystem.

The soils are poisoned with chemical fertilizers and pesticides, and allowed to wash away from overfarming, overgrazing, and erosion. Once teeming with life, our prairies and grasslands are being turned into lifeless dust fields.

The PBS documentary “SOS: Save our Soil,” part of its Food Forward series,<sup>1</sup> highlights a few “food rebels” who are finding innovative ways to create a more sustainable food system, including making humus compost out of grass stubble and turning chicken litter into biochar.

The top six inches of soil are the most precious yet least understood ecosystem on Earth. In order to appreciate its importance to our very survival, you first must understand the role carbon plays in maintaining the ecological balance of our entire planet.

Conventional agriculture that relies on tilling and monocrops decimates the top soil and is responsible for massive losses every year. So much so that some predict that most of the topsoil in the US will be lost in the next two generations.

### Have We Forgotten We're Carbon-Based Life Forms?

All life on earth is carbon-based, yet we seem to ignore carbon's importance. Even soil microbes need carbon to flourish, which is why slow and steady carbon depletion from our soils will inevitably lead to ecological collapse.<sup>2,3</sup> Deprived of carbon and critical microbes, soils become sterile; devoid of the microbial ecosystem.

The problem of carbon depletion in soils is not limited to the US. The world's cultivated soils have lost 50 to 70 percent of their original carbon, much of which has been oxidized upon exposure to air to become carbon dioxide (CO<sub>2</sub>).<sup>4</sup>

One of the largest factors driving this carbon depletion problem is the food/agriculture industry, particularly tilling, lack of cover crops, monocropping, genetically engineered (GE) crops, and their massive dependence on synthetic chemicals, which quickly decimate topsoil.

Meanwhile, carbon dioxide emissions continue to rise. In 2012 alone, 35.7 billion tons of this greenhouse gas entered the atmosphere.<sup>5</sup> Some CO<sub>2</sub> is absorbed by the oceans, plants, and soil—healthy soil is a bountiful carbon reservoir.

Scientists have recently discovered how organic carbon is stored in soil—it binds only to

soil structures. Soil's capacity to absorb CO<sub>2</sub> is directly related to its health; therefore, soil preservation and restoration needs to be incorporated into today's climate models.<sup>6</sup>

## Why Restoring Carbon to Soils Is So Important

Much of the focus on reducing greenhouse gases revolves around reducing carbon emissions, but now that we're armed with rapidly expanding knowledge about carbon storage in soils, greater attention should be paid to carbon sequestration and soil restoration.

Carbon sequestration refers to taking the carbon from the atmosphere and putting it back into the soil, in a stable form of organic matter.

Many scientists say that regenerative agricultural practices can turn back the carbon clock, reducing atmospheric CO<sub>2</sub> while also boosting soil productivity and increasing its resilience to floods, pests, and drought. Today, just three percent of North America's tallgrass prairie remains, resulting in a massive loss of soil carbon into the atmosphere.

### According to Yale:<sup>7</sup>

"The importance of soil carbon—how it is leached from the earth and how that process can be reversed—is the subject of intensifying scientific investigation, with important implications for the effort to slow the rapid rise of carbon dioxide in the atmosphere.

Scientists say that more carbon resides in soil than in the atmosphere and all plant life combined; there are 2,500 billion tons of carbon in soil, compared with 800 billion tons in the atmosphere and 560 billion tons in plant and animal life.

And compared to many proposed geoengineering fixes, storing carbon in soil is simple: It's a matter of returning carbon where it belongs."

### According to Rattan Lal, director of Ohio State University's Carbon Management and Sequestration Center:<sup>8</sup>

"The top priorities are restoring degraded and eroded lands, as well as avoiding deforestation and the farming of peatlands, which are a major reservoir of carbon and are easily decomposed upon drainage and cultivation...Bringing carbon back into soils has to be done not only to offset fossil fuels, but also to feed our growing global population. We cannot feed people if soil is degraded."

## Soil's Favorite Food: Humus

Several game-changing farmers are addressing this problem. California farmer John Wick, who calls himself a "carbon farmer," is making humus compost. Wick is the co-founder of the Main Carbon Project in Nicasio, California. Carbon-rich organic matter is what gives soil its water-retention capacity, its structure and fertility, so the objective is to add high-quality, sustainable organic matter back into the soil—and humus compost fits the bill.

Wick makes humus compost from biomass such as corn stalks, wheat, and oat straw, soybean stubble, manure, and clay, plus three microbial inoculants. This is not ordinary compost, but closer to the naturally occurring humus that forms on forest floors.

## Humus and Compost Are Two Different Things

It's important to realize that compost and humus are different. Compost is organic matter that's been decomposing to the smallest particles. Finished compost is only halfway to humus, which is a more effective and matured form of carbon. Humus is not a layer of soil but a component in soil—

there is no such thing as a “humus layer.” Even though commercial products are sold as humus, the vast majority is really only finished compost, as true humus is only formed in nature.<sup>9</sup> This is presumably why John Wick calls his product “humus compost,” which is as close as we can get to true humus. Through photosynthesis, a plant draws carbon out of the air to form carbon compounds. What the plant doesn’t need for growth is exuded through its roots to feed soil organisms. Over time, these organisms (mostly bacteria and fungi) break down organic matter into smaller and smaller molecules until most of the usable chemicals in the organic matter have been extracted by the microorganisms and made available to the plants.

When all of the “good stuff “ is used up, the remaining material is called humus in a process known as humification. Humus consists mostly of carbon in complex molecules or aggregates, and because microorganisms cannot further decompose it, it’s extremely stable—humus can persist in soil for hundreds and even thousands of years. This is in contrast to “active” topsoil carbon, which is in continual flux between microbial hosts and the atmosphere. **Humus Gives Soil Its Ability to Store Water and Nutrients**

Scientists don’t yet fully understand humus, but they’ve been able to identify some of the characteristics that make it so highly beneficial, including the following:

**Like a big sponge, humus can hold up to 90 percent of its weight in water**

**Because of its negative charge, many plant nutrients stick to humus (nitrogen, calcium, magnesium, phosphorus, and others), preventing them from washing away and acting as nature’s slow release fertilizer**

Humus massively improves soil’s structure, making it loose and friable and helping plants root by providing them better access to nutrients, water, and oxygen

Humus may help “filter” toxic chemicals out of the soil, much like carbon-based water filtration systems filter toxins out of your water

**You can build your soil’s humus content by top coating—not tilling—your soil with organic matter, such as woodchips, manure, and compost. Tilling should be avoided as it destroys soil’s intricate structure. Many innovative farmers and agricultural scientists have found ways to turn animal and human waste into fully finished, healthy compost—you can’t get much more sustainable than that! And it really packs a punch—in one case, a farmer who topped his soil one time only with one-half inch of manure compost got 25 to 50 percent more plant growth for four years. Turning Chicken Poop into Biochar**

Biochar is another way to add stable, long-lasting carbon to your soil. Biochar is created by slowly heating a biomass in a low-oxygen environment, such as a kiln, until everything but the carbon is burned off, and then putting it into the ground. Historically, fire has been the driving force of the earth’s carbon cycle. Natural fires started by lightning burned large swaths of plants and trees, returning the carbon back to the soil in the form of charcoal. Today, most societies take steps to prevent wild fires and greatly restrict burning practices. Midwest poultry farmer Josh Frye has figured out a way to do what fires do, by transforming chicken poop into biochar using green technology with minimal emissions. Just like the scientists who successfully turned human urine into fertilizer, this is one more example of how waste can be turned into a useful and sustainable product with the potential for improving our food system and reducing environmental impacts.

## Increase Your Soil's Health with Woodchips

A great, cost-effective alternative to compost or biochar that will radically improve the nutrient quality of your foods is mulching with wood chips. I learned about wood chips during my interview with Paul Gautschi. You just lay down uncomposted wood chips on top of your garden—using whatever is available locally, typically a combination of leaves, twigs, and branches. The chips break down gradually and are digested and redigested by a wide variety of bacteria, fungi, and nematodes in the soil, which is exactly what happens in nature. After a year or so, you'll develop lush soil underneath the chips that will happily support trees, vegetables, or whatever else you're trying to grow. The longer you leave the chips on and the deeper you heap them, the thicker your topsoil will be. Wood chips also reduce your weeding by more than 90 percent, because the weeds that do grow are very easy to pull out by their roots. Wood chips drastically reduce the need for watering and eliminate your need for fertilizers, and they provide excellent insulation for your plants and soil, moderating the temperatures in both summer and winter.

Woodchips are a very concentrated form of biomass and can form massive amounts of humus if allowed to compost properly. I have personally put on over a half a million pounds of woodchips on my quarter acre of landscaping and am starting to see excellent results on my four dozen fruit trees, berry shrubs, and vegetables. The chips eliminate the need for irrigation and fertilizers, reduce weeds, and serve as earthworm magnets. The earthworm population on my property has literally exploded.

## You Can't Be Healthy Without Food from Healthy Soil

One of the more insidious aspects of the industrial food system is that, as soil becomes sicker and less able to perform its functions, farmers become increasingly dependent on the chemical technology industry—they become trapped. The use of glyphosate begins a downward spiral, making it necessary for farmers to use more and more herbicides, pesticides, and synthetic fertilizers that kill soil microbes. Especially if they're using genetically engineered (GE) seeds. Weeds become resistant to glyphosate, so farmers must use more weed killers. Crops become nutrient-deprived, so they're forced to increase their use of synthetic fertilizers. Weeds and bugs become superweeds and superbugs... and on and on in a vicious cycle. The best way to avoid this trap is to refrain from using agrochemicals in the first place. Any organic farmer will tell you that they're growing SOIL, not food—a properly cared for soil will take care of growing your food. The key is to use regenerative soil techniques instead of factory farming approaches, which are degenerative.

The answer to world hunger is not GE foods or fuels, but rather reverting to ecologically rational and sustainable agricultural practices, with an emphasis on supporting small local farmers. In a comprehensive global report entitled "Agriculture at a Crossroads," IAAST (International Assessment of Agricultural Knowledge, Science and Technology for Development) gave high-tech farming a dismal two thumbs-down.<sup>10,11</sup> Resistance to revamping the food system can be expected from a few mega-corporations whose pockets are lined by the chemical technology and pesticide industries, but as a consumer, you have a great deal of power as you vote every day with your wallet.