

# SUSTAINABLE FARMING

INCORPORATING AWA NEWSLETTER

VOLUME 2 | ISSUE 3 | FALL 2017 | \$5

## THE WORLD UNDER OUR FEET

SIMPLE STEPS FOR MANAGING SOIL

**PLUS**

**PORK CO-OP GOES NON-GMO**

**CARBON FARMING**

**POULTRY LITTER MANAGEMENT**





# BE PREPARED



As I write, the full magnitude of Hurricane Harvey—and now Hurricane Irma—is becoming all too clear, and our thoughts are with everyone affected. Watching the events unfold in urban and rural areas in Texas and Florida, and seeing images of ranchers moving hundreds of cattle through heavy floods to safety and the destruction of homes and businesses, is truly frightening. Our staff is reaching out to all farmers and ranchers in the program in Texas and the Southeast, and we are here to assist and offer support in any way we can. Please also consider donating towards our efforts to help those in need. For further details, visit [agreenerworld.org/donate](http://agreenerworld.org/donate)

I don't want to make politics from this latest weather-related tragedy, and scientists have already cautioned that no individual weather event can be blamed on global warming. However, commentators for the Intergovernmental Panel on Climate Change (IPCC) have reiterated that extreme weather events will become more frequent and more violent or intense as a result of climate change. This was certainly the case with both Harvey and Irma. The IPCC also warns that, "Observed impacts of climate change have already affected agriculture, human health, ecosystems on land and in the oceans, water supplies and some people's livelihoods."

While pasture-based management has built-in resiliency and carbon sequestration potential, we know some of you are already exploring adaptive techniques to make your businesses more resilient to the impacts of climate change; these efforts seem more pertinent now than ever.

Turning to recent program news, we are excited to launch a new AGW membership program (see page 4), enabling individuals and organizations to directly support our work to deliver positive solutions in food and farming. Various levels of AGW Membership are available, with different benefits (including thank you gifts). We really hope you'll sign up as founding members to 'help us help you,' and that you'll promote and share the benefits of AGW Membership with your friends, family and customers. Look out for more news on ways you can get involved and help us grow membership over the coming months.

On the same note, we've also recently updated our ever-popular *Food Labels Exposed* guide (see opposite) and will soon be re-launching the *Food Labels Exposed* smartphone app. Again, your support in sharing these vital educational resources with the public will help raise awareness of the impact of our food choices and the importance of supporting high-welfare, sustainable food businesses like your own.

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# HOG HEAVEN

## Major pasture-raised pork co-op goes non-GMO

The North Carolina Natural Hog Growers Association (NCNHGA) is the first farming cooperative in the U.S. to be Certified Non-GMO by A Greener World.

The move by the NCNHGA—the Southeast's largest pasture-raised pork cooperative—comes in response to surging consumer and retailer demand for certified non-GMO meat, eggs and dairy products that also meet high welfare and sustainability expectations.

Launched last year, Certified Non-GMO by A Greener World is the only certification in the U.S. and Canada that guarantees food is produced without the use of genetically modified feed, supplements or ingredients, and comes from animals raised outdoors on pasture according to the highest welfare and environmental standards. Certified Non-GMO by AGW is an optional, additional accreditation for farmers meeting Animal Welfare Approved standards and is one of only two certifications in the U.S. that actually tests for the presence of GMOs.

"With ever-growing demand for non-GMO products, pursuing the Certified Non-GMO by AGW status for our pork products was the next logical step," says Jeremiah Jones, farmer and President of the NCNHGA. "This move will keep us at the forefront of the market."

NCNHGA was established in 2007 when a group of pasture-based hog farmers came together to pool resources and build markets for their high-quality, high-welfare pork.

In 2009, the NCNHGA decided to make Certified Animal Welfare Approved by AGW a centerpiece of their operation—and make certification a requirement for all members—

to help communicate their high-welfare and environmental management practices. Although the cooperative has been Certified Animal Welfare Approved by AGW since 2009, members were eager to gain Certified Non-GMO by AGW status for their pigs. The rigorous process will involve every cooperative farm undergoing annual audits and input testing to ensure the integrity of the non-GMO claim. All members are expected to be certified by the end of 2017.

"The certification process is rigorous, but achievable and affordable, and it shows our customers that we're going above and beyond to offer a quality product that is what it says it is: truly sustainable and non-GMO," adds Jones.

For more information about Certified Non-GMO by AGW, visit [agreenerworld.org/solutions-and-certificates](http://agreenerworld.org/solutions-and-certificates)



MIKE SUAREZ

## IN THE NEWS...

### WRONG ABOUT FAT?

A new study published in the widely respected medical journal, *The Lancet*, questions the long-standing global dietary advice on saturated fats. Led by McMaster University, Canada, the long-term study of 135,000 adults globally found high carbohydrate intake was associated with higher risk of total mortality, and that people lived longer by reducing carbohydrate intake and increasing consumption of saturated fats. "Global dietary guidelines should be reconsidered in light of these findings," the authors advise.

### MITIGATING METHANE

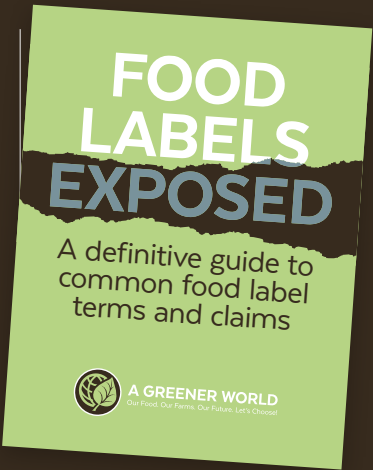
The government of Canada is investing \$1.1 million towards a multiyear cattle feeding study to assess if adding biochar to cattle feed reduces methane emissions and improves feed efficiency. Biochar is plant-based charcoal, commonly used as soil conditioner. The project at the University of Lethbridge, Alberta, is one of 20 new research initiatives funded by the Agricultural Green House Gases Program, which supports research into on-farm greenhouse gas mitigation practices and technologies.

### DICAMBA CONCERNS

Missouri Director of Agriculture Chris Chinn has issued a statewide Stop Sale, Use or Removal Order for all Dicamba containing products labeled for agricultural use in Missouri. Dicamba is an active ingredient contained in certain herbicides. The recent announcement follows over 300 Dicamba-related complaints to the Missouri Department of Agriculture since January 1, 2017, alleging crop damage from herbicide spray drift. The Order remains in force until December 1, 2017.

### FOOD LABELS EXPOSED

AGW has revised and updated its popular *Food Labels Exposed* guide. Recommended by the Organic Consumers Association as "a comprehensive labeling guide," the 28-page guide contains over 100 common food terms and claims with clear, unbiased definitions explaining exactly what they mean. Available in print or as a download from [agreenerworld.org/solutions-and-certificates/what-food-labels-really-mean](http://agreenerworld.org/solutions-and-certificates/what-food-labels-really-mean). Look out for the updated app version, coming soon ...







# IN THE NEWS...

MIKE SUAREZ



## GRASSFED BEEF REPORT TO CHEW OVER

The potential of the U.S. grassfed beef market is enormous, according to a new report, but the industry must work together to address key barriers to growth.

Produced by Stone Barns Center for Food and Agriculture, *Back to Grass: The Market Potential for U.S. Grassfed Beef* provides the first comprehensive overview of the U.S. grassfed beef sector—and predicts huge potential for market growth, with retail sales of labeled fresh grassfed beef growing from \$17 million in 2012 to \$272 million in 2016, doubling every year. The report also highlights that a significant proportion of grassfed beef is currently sold unlabeled into conventional markets.

However, the report identifies a number of significant barriers to growth: inconsistent (and sometimes low quality) grassfed beef production; technical and logistical challenges of producing grassfed beef year-round; large price premiums

over conventional beef, making grassfed beef unaffordable for many consumers; and cheap imported grassfed beef (accounting for 75–80 percent of total U.S. grassfed beef sales by value). In addition, confusion in the market place over the definition of grassfed—and questionable developments and practices, such as “grassfed feedlots”—risk undermining consumer confidence.

The report calls on the grassfed beef sector to implement a number of coordinated actions, including training and technical advice on producing high-quality, well-finished grassfed beef year round; developing robust baseline standards for the grassfed label and national “brand-building” campaigns; greater market cooperation and coordination to increase scale and aggregation; and establishing best practice, scaled-up finishing systems to produce grassfed beef at an affordable price.

Read the full report at [stonebarnscenter.org](http://stonebarnscenter.org)



### TWITTER TAKEOVER

Would you like to take over AGW’s Twitter account for a day?

Twitter Takeover is a popular activity where Twitter users hand over use of their account to other likeminded organizations. Over the summer, the Rodale Institute and Consider Bardwell Farm in West Pawlet, VT, each temporarily took over AGW’s Twitter account to share images of their AWA farms and talk about what they do—and why.

To get involved, contact [info@agreenerworld.org](mailto:info@agreenerworld.org)



## TOP CHEESE AWARDS

Seven Certified Animal Welfare Approved by AGW farms took home 15 American Cheese Society Awards at the 34th annual American Cheese Society Competition in Denver, CO, in August.

Four AWA cheeses earned top recognition from over 2,024 entries, with ‘Claire’s Mandell Hill’ and ‘Greta’s Fair Haven’ AWA goat’s milk cheeses from Ruggles Hill Creamery, MA; ‘Woolly Rind,’ an AWA sheep milk cheese from Green Dirt Farm, MO; and ‘Ricotta Salata Vecchio’ made from AWA cow’s milk at Caputo Brothers Creamery, PA, all taking first place awards.

Ruggles Hill Creamery and Green Dirt Farm took home five awards each. Additional winners include ‘Black Goat’ AWA goat’s milk cheese from Prairie Fruits and Farm Creamery, IL; ‘Slyboro,’ an AWA goat milk cheese from Consider Bardwell Farm, VT; ‘Atika,’ made with AWA goat and AWA sheep milk from Toluma Farms and Tomales Farmstead Creamery, CA; and ‘Bearded Lady,’ an AWA goat milk cheese from Prodigal Farm, NC.

Kathryn Spann of Prodigal Farm was also elected to the American Cheese Society Board of Directors for the next two years.

LEFT: SPRING23 | RIGHT: AMANDA HULL



### ANTIBIOTIC ALTERNATIVES?

A new report from the Pew Charitable Trusts, *Alternatives to Antibiotics in Animal Agriculture*, claims alternative animal health products could help minimize antibiotic use and reduce antimicrobial resistance.

However, A Greener World warns that efforts to develop ‘quick fix’ alternatives will not only prolong the unsustainable confinement model, but will do nothing to address wider human health, social, animal welfare and environmental impacts.

## NEW AGW MEMBER PROGRAM

A Greener World (AGW) is launching a new public membership program.

AGW Membership allows individuals and organizations to provide regular support towards AGW’s work to encourage sustainable farming and educate consumers about the impact of their food choices. Members will receive priority notifications and regular updates on programmatic activities and successes, as well as thank you gifts, depending on the level of support donated.

“Becoming a member of AGW gives people a

concrete way to support a more sustainable, transparent food system,” says Katie Amos, AGW’s Membership Coordinator.

“We’re excited to get the word out and we hope our farmers and ranchers will consider signing up and help us promote AGW Membership to friends, family and customers. We will be sharing ideas and ways you can all help us grow AGW Membership over the coming weeks. Watch this space!”

Visit [agreenerworld.org](http://agreenerworld.org) and select ‘get involved.’ All contributions are tax-deductible to the extent of the law.

## SPINS TO PROVIDE MARKET INSIGHT

AGW is working with SPINS—the leading provider of retail consumer insights, analytics and consulting for the natural, Organic and specialty products industries—to analyze sales of Certified Animal Welfare Approved by AGW, Certified Grassfed by AGW and Certified Non-GMO by AGW products across the U.S. and Canada.

“This exciting initiative with SPINS will allow us to identify growth trends and opportunities to benefit our certified farmers and ranchers,” explains Emily Moose, AGW Director of Outreach and Communication.

SPINS research incorporates Universal Product Code (UPC) data and high-level market analysis. “While the analysis and information we will receive from SPINS won’t provide farm-level sales data, it will help our certified producers best position their AGW labels as a selling point,” adds Moose.

Certified farms can get involved—and ensure their products are included in this exciting research—by contacting their regional Farmer and Market Outreach Coordinator. For contact details, see page 20.





**Like what you read?**

**Do you value our work to support market transparency and pasture-based farming?**

**Here's how to help us help *you*—and others**

AGW is an independent and non-profit organization. Because we are not dependent on certification fees, we can remain completely impartial in our auditing, resulting in unrivaled integrity and trust. But we DO rely on supporter donations. Please consider supporting us with a one-time or regular donation and membership, or promoting the AGW membership program with your friends, family and customers!

visit [agreenerworld.org](http://agreenerworld.org) and select 'get involved' / or donate at [agreenerworld.org/donate](http://agreenerworld.org/donate)

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\*For food producers and businesses in the AGW certification family.

for full details visit [animalwelfareapproved.us/farmers/labeling](http://animalwelfareapproved.us/farmers/labeling)  
or call 800-373-8806

**Opinion**

# FARM MARKETING SIN

Colleen Biggs dares to break the unwritten code

Making a living in agriculture is challenging at best. Add fluctuating commodity prices and it becomes downright difficult. Many farm families have turned to direct marketing to add value to their production. But why is the simple act of offering consumers anything different still considered woefully unacceptable by many mainstream producers?

## Pioneering direct marketing

Just over two decades ago we were at a crossroads on our ranch. The bottom had fallen out of the cattle market and we couldn't make ends meet. We knew our costs of production to the penny, managed our land sustainably and couldn't cut costs any further without compromising animal welfare. With three small children at home, no family support for childcare and 400 mama cows to manage, we couldn't get off-farm jobs. We had two options: quit ranching or add value to our production by direct marketing.

If you knew my husband and how much he loves his cows you would understand why we chose to stay on the land. But deciding to direct market our own brand of grass-finished beef was far from easy. It was the mid-1990s and direct marketing was almost non-existent in Alberta. At that time there was no internet or cell phones and everything had to be done the old-fashioned way with cold calls, faxing and snail mail. I traveled thousands of kilometers with three kids in car seats to meet with chefs and retailers to establish our business. We worked like dogs and lived like coyotes for years to scratch out our market share, but that wasn't the hardest part. We were publicly shunned in the agricultural community for doing something different.

I am no shrinking violet and understand that going against the grain comes at a cost, especially when the boundaries of traditional thinking are being tested. Historically, people relied heavily on one another to farm because it was so labor intensive. You had to get along with your neighbor and conform to an unwritten code of conduct because the survival of your community depended on it. Change was viewed with suspicion because it

potentially threatened the wellbeing of everyone. If your father and grandfather did it one way and it worked, why do anything different? While many things have changed on the farm, the social implications of breaking this unwritten code are still very real for anyone that markets a differentiated product. Especially for those that break ranks and connect directly with the consumer. This is the ultimate farm marketing sin that brings out the pitchforks in people. Ironically, agricultural producers express their personal preferences for farm equipment, pick-up trucks, cattle breeds and a long list of other items they use daily. But heaven forbid if the consumer expresses a preference for food items that don't align with mainstream production practices. Even worse are producers who cater to these consumers by offering differentiated products that meet their needs.

## Traitorous?

As soon as you publicly discuss your production and imply, infer or suggest a benefit over mainstream agriculture, you have broken the code and are considered traitorous. This is because industry organizations and many producers strongly feel that they should be trusted to make the right decisions for everyone involved, regardless of their production practices. By simply discussing our program we bring unwanted attention to issues in agriculture that are supposed to be kept quiet and definitely not discussed in public. Many feel that consumers are just not educated enough to make informed decisions about their food; by offering these people differentiated products that meet their preferences we are pandering to the uninformed.

## Step up to the plate

In a world where social media and Google are at everyone's fingertips you would think mainstream agriculture would notice that the milk has already been spilled. No amount of educating will ever conceal the light that the internet has shed on agriculture. To assume we can educate people out of their personal preferences is denying the reality of the modern food marketplace. Consumers want choice: as producers we can either step up to the plate or continue to sulk in righteous indignation.

*Colleen Biggs and her husband, Dylan, raise Certified Grassfed by AGW beef cattle and sheep and Animal Welfare Approved pigs at 10,000-acre TK Ranch in east-central Alberta, Canada*





# THE LIVING SOIL

Soils are the most biodiverse habitats on Earth and are vital to agricultural productivity—and our existence. Ember Morrissey takes a closer look at the world beneath our feet

It is easy to mistake soil for an inert, lifeless substance like the rock that so often lies beneath. Although we may not see it, soil is teeming with life. Over a billion individual microorganisms can inhabit a single gram of soil. This abundance of life is made up of a diverse assemblage of bacteria, fungi and a cohort of microscopic animals, insects and worms. Most soils are inhabited by over a thousand different types (or species) of organisms, all of which play a part in determining how the soil functions—including its ability to support plant growth.

## The soil food web

The primary job of soil microorganisms is to break down organic matter. If microbes went on strike, the Earth would quickly be buried under a giant layer of leaves and brush. Plants are the primary producers of organic matter entering soil, and thus form the base of the food web that support soil life.

The decomposition of plant remains begins with bacteria and fungi. These organisms release enzymes into the soil that break down large particles of plant material into small bits they consume for energy and growth. The next trophic level includes both microscopic and visible organisms that feed mainly on bacteria and fungi. Too small for the eye to see are amoeba, roundworms (nematodes) and tiny bugs (micro-arthropods), such as mites. Larger fungal and bacteria feeders include the familiar earth worms. At the top of the soil food web live the predators, which encompass different species of nematodes and arthropods, including some centipedes. In addition to feeding on other soil organisms, the worms and arthropods stimulate decomposition by breaking organic matter into smaller pieces and agitating the soil, both of which stimulate bacterial and fungal activity.

At every step in this food web, some of the carbon that was previously bound up in plant material is released into the atmosphere as carbon

dioxide as the organisms breathe. Similarly, the nutrients (such as nitrogen and phosphorus) are released into the soil. In this way, soil microorganisms ‘recycle’ nutrients, releasing essential elements from the dead so that they can be used by the living once again.

For farmers, this decomposition process is critical to sustaining soil fertility. Adding organic inputs, such as manure, compost and plant residues, ensures nutrients are returned to the soil so that it does not become exhausted of key elements over time.

## Microbes and soil structure

Improving soil structure has many benefits. Plants benefit directly from healthy soil structure, as roots are able to penetrate the soil more easily and a greater proportion of seedlings emerge after planting. Soils with healthy structure also have enhanced water infiltration and retention, as well as reduced erosion risk.

Bacteria and fungi play a critical role in maintaining and building healthy soil structure. As microorganisms go about their job of breaking down plant debris, they simultaneously build soil organic matter, improving soil structure. While live microbes only account for about four percent of the organic material in soil, an estimated 80 percent is derived from microorganisms. This microbially processed organic matter is composed of molecules excreted by microorganisms and the remains of dead microbial cells. Microbially processed organic matter is more stable than plant residue because it is thoroughly integrated into the soil. To understand why this is the case we must consider the physical structure of soil.

If you look closely at your soil, you will notice it is composed of seemingly endless little crumbs known as aggregates. A healthy soil has a high degree of aggregate stability, meaning the little clumps do not fall apart easily. Soil aggregates are assemblages of tiny, often microscopic, soil



To maintain a healthy soil biota, it is important to maintain soil structure and add organic matter into the soil

particles all stuck together. Microorganisms live in, around and between these little clumps. While aggregates provide a home for microbes, these bacteria and fungi are not passive inhabitants. In fact, you can think of microbes as tiny builders who construct and maintain soil aggregates. Bacteria within aggregates produce compounds to adhere to soil particles and remain in a favorable habitat. This molecular glue that keeps microbes in their favored environment also holds soil particles together.

Fungi contribute to the formation of larger soil aggregates. Long, hair-like fungi weave threads around and through soil particles, holding them together. Because soil bacteria and fungi are so well integrated into soil aggregates, the organic matter they produce is less likely to be eroded away or decomposed. In this way, microorganisms build soil organic matter and help hold aggregates together, improving soil structure.

Beneficial plant-microbe interactions

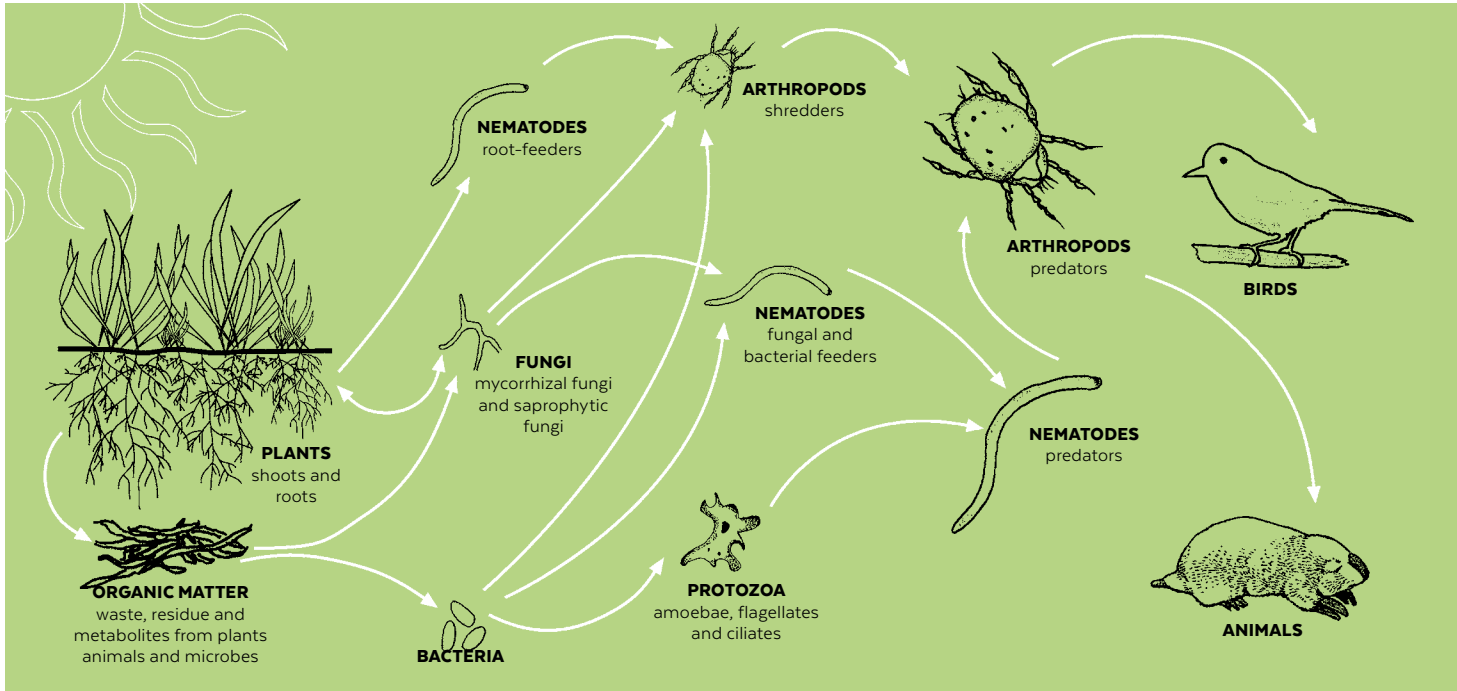
Plants and microorganisms have been living together for hundreds of millions of years. Over this long evolutionary history, many plants have become reliant on microbial partners and vice versa. Generally, these ‘symbiotic’ relationships involve sharing resources, where the plant provides carbon to microorganisms in return for nutrients.

The oldest and most prevalent of these symbioses is between plants and root-associated fungi known as mycorrhizae. This relationship is ancient, estimated to have begun around 400 million years ago when early land plants

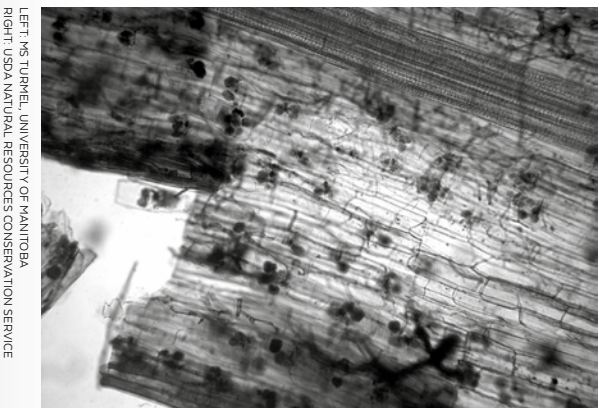
transitioned from an aquatic to a terrestrial environment. Because this symbiosis coevolved with land plants, the majority (over 80 percent) of terrestrial plants, including most agricultural crops, participate in this mutually beneficial relationship.

Mycorrhizal fungi form an extensive web of microscopic tubes known as ‘hyphae’ that are extremely thin, approximately one tenth the size of fine root hairs. These hyphae extend from the plant root out through the soil, far beyond the plant’s rooting zone. In this way, the fungi increase the plant’s access to water and vital nutrients, such as nitrogen and phosphorus. This type of symbiosis is particularly critical for the establishment and success of corn and most cereal crops; it also greatly benefits flax, potatoes, sunflowers and soybeans. Mycorrhizal fungi are generally present in the soil, and so it is usually not necessary to inoculate when planting. In order to maintain a healthy symbiosis between plants and mycorrhizal fungi, producers should be careful to limit the use of phosphorous fertilizer.

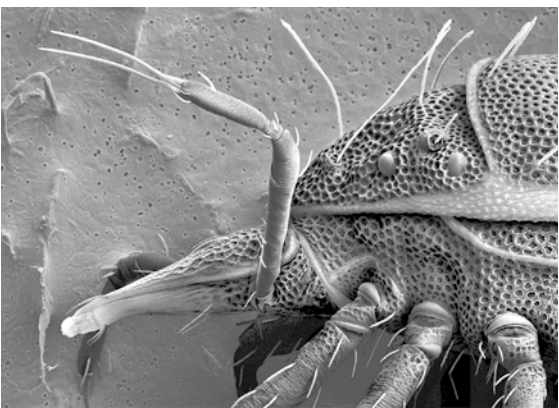
Fungi are not the only microorganisms that intimately associate with plant roots. Symbiotic bacteria, most notably nitrogen-fixing Rhizobia, engage in a relationship that is central to maintaining soil fertility. Rhizobia live within the roots of legumes, such as alfalfa, beans and clovers. This beneficial ‘infection’ leads to the formation of spherical growths on the roots known as nodules. Within these odd looking structures, bacteria are busy at work converting atmospheric nitrogen into bioavailable nitrogen. Much of this nitrogen is shared with the plant and, in return, the plant provides the bacteria with sugar, a source of food



An incredible diversity of organisms make up the soil food web



Mycorrhizae fungi increase plant access to nutrients



The purple snout mite is a voracious soil predator

and energy. Because this relationship requires an investment from the plant, nodule formation will not occur when excess nitrogen is available from fertilizer.

Integrating legumes into crop rotations or pastures can naturally and sustainably increase nitrogen availability in soil. Legumes incorporate nitrogen into the soil as they grow and when their residues are added to the soil. For instance, nitrogen from a tilled-in legume cover crop will be slowly released by microorganisms and made available to plants gradually over the growing season.

Microbes and nutrient management

Soil microorganisms can be allies or enemies in the struggle to sustainably enhance or maintain soil fertility. The Rhizobia discussed above are certainly allies that improve soil fertility. However, there are also organisms that contribute to the loss of nutrients—particularly nitrogen—from agroecosystems.

Nitrogen is generally lost from agricultural systems when nitrate is leached into the watershed or converted into atmospheric nitrogen by soil microorganisms during a process called denitrification. Typically, nitrogen enters the soil in the form of ammonium following nitrogen fixation (see legume-Rhizobium association above) or fertilizer addition. Ammonium is usually well retained in soil because it adheres to soil particles. However, excess ammonium is rapidly converted to nitrate by specialized bacteria in a process known as nitrification. In one sense, this is valuable because nitrate is the preferred nitrogen source of many crops, and thus may stimulate plant growth. But nitrate is also highly soluble and is often leached during heavy rains. Saturated soil also enhances nitrate loss through denitrification. Wet soil limits soil oxygen availability, and under these circumstances denitrifying bacteria use nitrate to respire, converting it to atmospheric nitrogen. A variety of strategies can be employed to

work with—and not against—microbes to retain added nutrients:

- Add fertilizer when plants are actively growing and taking in nitrogen. This will limit ammonium accumulation, nitrification and nitrate loss.
- Avoid fertilizing during or immediately prior to seasons of heavy rain. Much of the added nitrogen would be lost through nitrification and leaching, or denitrification.
- Add fertilizer along with hay, straw or non-legume crop residues. This will cause the nitrogen to be taken up into microbial biomass as they decompose the plant matter, and it will be released more slowly over the course of the growing season.

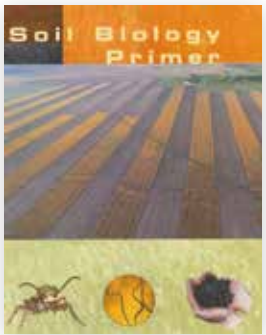
Maintaining biological soil health

Just like you, soil microbes need a safe place to live and a balanced diet to thrive. To maintain a healthy soil biota, it is important to maintain soil structure and add organic matter into the soil.

Best practices for crop production including minimizing tillage, using crop rotations, and planting cover crops. Cover crops prevent soil erosion, and also bring organic matter into the soil to sustain the soil community. In pastures, soil can benefit from rotational grazing, avoiding high stocking densities (particularly following heavy rains), and planting deep-rooting perennial forages. The diversity of crop rotations and pastures positively influences diversity in the soil community, and diverse soil communities are associated with lower incidence of crop disease. These positive practices all serve to maintain soil structure and increase organic matter inputs into the soil, which feed soil microorganisms and support soil function.

Ember Morrissey is Assistant Professor of environmental microbiology at Davis College of Agriculture, Natural Resources & Design, West Virginia University.

There are more living things in one teaspoon of healthy soil than there are people on the planet



The Soil Biology Primer (2002) offers an excellent introduction to soil life and how it contributes to agricultural productivity and air and water quality. Available from the Soil and Water Conservation Society at [swcs.org](http://swcs.org)



# THE BEATING HEART OF SUSTAINABLE FARMING

What is soil health—and how can you improve it on your farm? Jennifer Dungait offers some practical advice

The idea of soil health is a relatively new scientific concept in modern farming. It differs from the concept of soil quality, because it recognizes the key role of managing soil biology, as well as soil chemistry (such as pH and nutrients) and soil physics (the impact of tillage), to achieve more sustainable farming systems.

I am a soil biogeochemist and committed to research on soil organic matter in agricultural systems. I work side-by-side with farmers to improve soil organic matter and soil health by developing mutual understanding of how science (soil biology, chemistry and physics) can be used to improve the sustainability of farming. I work with farmers and scientists across the world to find out how popular indicators of soil health work at the microscopic level, and to use this science-based knowledge to develop cheap tools for all farmers to use so we can understand whether changes in management are improving the health of their soils—or harming it.

### A farmer's most useful tool? The shovel

Over the last generation, the widespread adoption of big farm machinery and hands-off technology has widened the distance between many farmers in the West and their most precious resource and ally – the soil. Contrast this with the majority of farmers in the developing world who are literally face-to-face with their soils every day.

Of course, I am not advocating moving away from technology. But farmers across the planet need to use their legacy of knowledge and skills in partnership with new technologies so they can produce sufficient, safe and nutritious food that meets the dietary needs and food preferences for

an active and healthy life for all, while at the same time nurturing Mother Nature. This must start with understanding and respecting the foundation of all agricultural production—the soil.

### Get to know your soil

The best place to start understanding and improving your soil health is to develop a direct relationship with your soil. Take some time to go out into your fields and dig a soil pit to get to know the soils across your farm intimately.

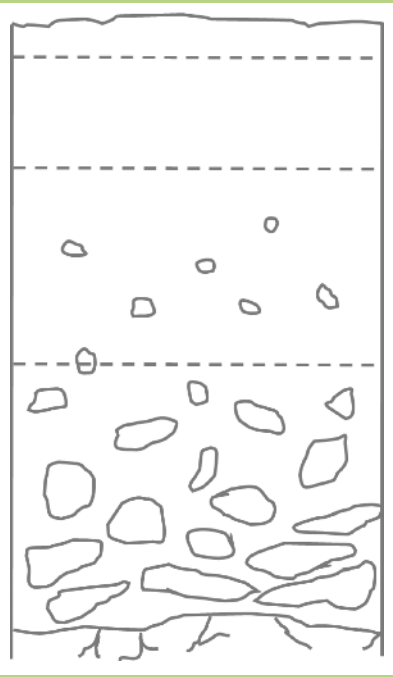
First, dig down as far as you can (to the bedrock, if that is possible), and then tidy up one side so that it is vertical, straight edge. As you dig, think about the following points:

- Is it difficult to dig?
- Is it sandy, sticky, dry, crunchy, stony?
- Can you see different soil layers? What color are they? How deep are they? Are the boundaries between layers sharp or do they fade into each other?
- Does the soil stick together or fall apart? Feel the soil from each soil layer. If it is dry add some moisture. Smear it between your fingers. Is it stoney, gritty, soapy or sticky?
- How far do plant roots go down? Are there obvious layers of compaction that roots cannot get through?
- Are there any signs of life? What kind of bugs are there? Look for earthworms, spiders, beetles and other bugs, as well as fungal growth.

Next, draw a chart to describe your soil. (See 'Dig deeper', overleaf, for the NRCS website which contains an excellent guide on digging, drawing and analysing your soil profile.)



Dig down as far as you can (to the bedrock, if possible) and tidy up one side to a vertical, straight edge



Draw a simple chart to describe your soil and what you see. Note different layers and colors



If the soil breaks into platy aggregates with sharp edges it might indicate compaction



If the soil breaks easily into rounded aggregates it probably shows that biology is at work



Soil particles stuck together near to plant roots (the 'rhizosphere')



### Get to grips with your dirt

Next, grab a handful of top soil. Does it smell good (like the air after heavy rain) or sour? When you squeeze it does it fall apart or stay together in a sticky lump? If it sticks together, break it apart. Does it break into platy aggregates with sharp edges? If so, this might indicate compaction. If it breaks easily into rounded aggregates it probably shows that biology is at work, helping to give your soil good tilth. If it is dry and disintegrates into sand or dust this means that the biology is finding it tough to make soil aggregates because the soil is low in soil organic matter and/or limited by water. (See section below on aggregates as soil health indicators).

At Rothamsted Research, we have been working for decades on the relationship between soil organic matter and soil structure. We have proof from our very long term field experiments (170 years old next year!) and working with farmers that there is a direct relationship between aggregate stability in water and the amount of soil organic matter the soil contains.

Research shows that, just like us, the bugs that live in the soil organize the world around them to make a comfortable home for themselves. You can think about soil aggregates as houses, where the bricks are soil particles (weathered bedrock) held together by mortar, which is soil organic matter. Organisms that live in the soil (fungi, bacteria, roots and bugs like earthworms) use the organic matter they eat to build their homes by actively producing goos and gels to stick soil particles together.

So, when thinking about how to improve the health and management of your soils, remember that bugs need a constant supply of soil organic matter as food to keep producing the necessary goos and gels that hold the soil particles together.



SIMPLE TESTS TO ASSESS THE HEALTH OF YOUR SOIL

Digging soil pits on your farm is the first step in learning about your soils and finding out what you can do to improve soil health, while comparing soil pits in different fields across your farm will give you an even better picture. You may find that fields you thought were similar are very different when you dig below the surface. But there are a number of simple tests you can do to get to know your soil even better.

Before you start any of these tests, note the weather and make sure you are comparing sites with the same soil types—from sandy loam through to clay. If you are not sure of your soil type, a number of simple online guides are available (I like the easy-to-follow soil type guide at [opalexplorenature.org/soilsurvey](http://opalexplorenature.org/soilsurvey)). Try to choose sites that are flat and well away from trackways and other features like field boundaries and trees that could affect the general character of your soil. Finally, I would also advise testing the pH of the soil using a simple off-the-shelf kit or a reputable service, as this can affect the life in your soil.

You can do the following tests singly, but you will get to know your soil better the more you play with it!

Soil aggregate stability test

All you will need for this test is a selection of aggregates from soils across your farm where you think the soil organic matter is different, some transparent containers and some cold water.

First, once your soil is very dry (naturally during hot weather or you can dry it in your oven on a very low temperature for 24 hours), try squeezing it to see if it will break apart between your fingers. Next, choose some aggregates of a similar size (½ to 1 inch diameter) and drop them into the water. Watch them to see how quickly they disintegrate. If you time how long it takes to fall apart, you can revisit the same site after a change in management to see if it has made a difference to soil aggregate stability.

If your soil aggregate quickly fall apart in water (it ‘slakes’), it generally means it has less soil organic matter, and it will do the same when it rains, breaking up quickly before drying and creating structures that plant roots will struggle to penetrate. The longer soil takes to disintegrate in this test, the more soil organic matter it contains and the more resilient it is to erosion. In general, better soil aggregate stability (slower to break up) means better soil quality. If your aggregate has a lot of soil organic matter it may not break apart at all!



Earthworms love soil organic matter. Count how many you find



Arable soil aggregate in water



Grassland soil aggregate in water

Water infiltration test

This test is based on the evidence that soil with good soil organic matter content holds onto water, while the good soil structure allows water to move deeper into the soil profile. This creates the right conditions for roots to grow deeper and creates a reservoir of water when the weather is dry. The water moves through the soil through pores that exist between soil particles and through larger earthworm burrows and root channels. Take a short piece of drain-pipe and push it a couple of inches into the ground. Using a measuring jug or bucket, pour a known amount of water onto the soil and use a stop watch to time how long it takes the water to disappear. Again, compare results with tests in different soils across your farm, and also revisit the same site after a change in management to see if it has made a difference. Make sure you use the same pipe, inserted to the same depth and the same amount of water each time you do this test.

Soil color

This very simple test is based on the general observation that soil organic matter makes soil darker in color. The color of different soil types depends on their mineral contents, so it is difficult to compare between them. However, as a general rule, the surface soil will contain more soil organic matter than the subsoil and so should be darker in color. For this test, dig a soil pit and take a soil sample from the different soil layers. Air or oven dry them and compare their color.

Earthworms

Earthworms love soil organic matter and you always find them together in unglaciated landscapes. When you dig your soil pit, remove the soil onto a plastic sheet and gently break the soil apart. Count the earthworms (and any other visible soil animals) that you find in the different layers. While there is no “correct” number of earthworms, they are a useful indicator of soil organic matter and soil health. In general, the more earthworms per given area of soil, the higher the soil organic matter levels. Populations are highly variable in space and time, but the NRCS suggests 10 worms per square foot of soil is a reasonable population, although in grassland numbers can rise to 50 worms per square foot.

Professor Jennifer Dungait has worked in soil science for over 15 years. Contact her at [jennifer.dungait@rothamsted.ac.uk](mailto:jennifer.dungait@rothamsted.ac.uk)



Pour water onto the soil and time how long it takes the water to disappear



Air or oven dry different soil samples and compare the color

**DIG DEEPER**

The *Comprehensive Assessment of Soil Health* by Cornell University available FREE online at [soilhealth.cals.cornell.edu/](http://soilhealth.cals.cornell.edu/)

USDA Agricultural Research Service: [ars.usda.gov/](http://ars.usda.gov/)

Natural Resources Conservation Service: [nrcs.usda.gov](http://nrcs.usda.gov) (topic ‘soils’)





# FARMING CARBON

Torri Estrada introduces the Marin Carbon Project, an initiative that seeks to enhance carbon sequestration in rangeland, agricultural and forest soils



What began as a conversation between a Marin rancher, a local rangeland expert and an esteemed researcher has grown into a strong working partnership with ranchers to scale on-farm conservation—and is seeding a growing movement for carbon farming.

For many years, John Wick, co-owner of Nicasio Native Grass Ranch, and Dr. Jeff Creque, area rangeland consultant, had been collaborating on John's ranch to improve ranch productivity. The more John learned, the more he became interested in the potential to capture carbon in ways that would benefit the ranch and provide a potential solution to climate change. "There were visual signs on the ranch that our efforts were making a difference," John explains, "but we had no way to measure and confirm what was happening."

In 2007, John and Jeff arranged to meet with several University of California, Berkeley faculty to explore how this potential could be researched and scientifically confirmed. Dr. Whendee Silver, a biogeochemist with the measured objectivity and skepticism of a trained researcher, took particular interest in the question, "Can farming and ranching practices capture carbon from the air and store it in rangeland soils?"

## Proof of concept

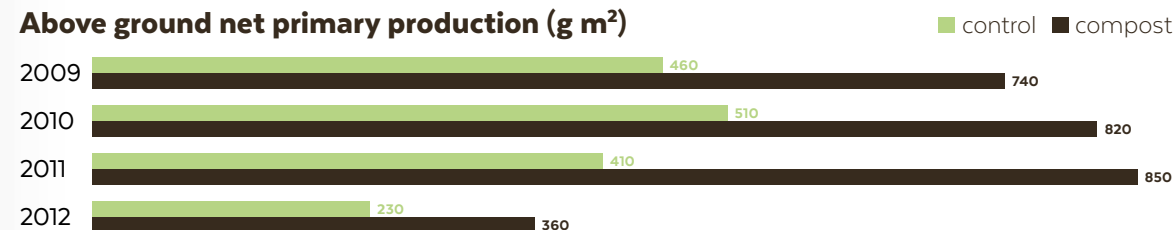
That conversation initiated the creation of the Marin Carbon Project (MCP) to support a research program that has now published over a half dozen scientific articles and provided confirmation that the application of compost on California rangeland soils leads to significant productivity and long-lasting carbon storage. In 2008, with Silver and her team monitoring, MCP spread 1/2 inch of compost over test plots. In response, the grasses began growing faster, with 40-70 percent more growth on the test plots, pulling more carbon into the soil. At the end of the year that growth had netted a metric ton of carbon added to the soil per hectare. The next year, with no further treatment, the soil had captured another ton of carbon, the next year another ton, and so it has continued.

Subsequent research undertaken by Dr. David Lewis of UC Cooperative Extension (UCCE) documented that a single kilometer of on-farm creek restoration sequesters nearly 4,500 metric tons of carbon, equivalent to the energy used by nearly 1,500 homes or emissions from nearly 3,500 cars in one year.

This proof of concept for carbon sequestration and documented gains in ranch productivity provided the needed confidence and credibility to scale up and implement this practice and others on cooperating ranches.



## Above ground net primary production (g m<sup>2</sup>)



## Scaling up

In parallel with this research, Marin's agricultural organizations were forging a partnership around agriculture and climate resiliency. Representatives from the Carbon Cycle Institute (CCI), Marin Agricultural Land Trust (MALT), Marin Agricultural Department, Marin Resource Conservation District (MRCD), Natural Resources Conservation Service (NRCS) and UCCE forged the Marin Carbon Project to coordinate broader community education and on-ranch practice implementation, identifying agricultural solutions to improve soil health and address climate change. MCP is doing this by taking the results from research plots of a few acres and scaling up to the entire ranch, and now countywide.

The cornerstone of this partnership is the development of carbon farm plans—comprehensive, ranch-specific documents detailing a suite of carbon beneficial practices that, when implemented, amount to substantial quantities of carbon captured in farms soils, as well as other benefits. Presently, the MCP (through the leadership of MRCD, MALT and CCI) have completed plans on over 20 ranches, adapting carbon beneficial practices, such as compost application, riparian forests, among others recommended by NRCS, to the specific soil conditions and production systems of each ranch. Using the MCP model and tools like COMET-Planner, CCI is currently working with partners, including land trusts and resource conservation districts, in over 20 counties statewide to develop and implement carbon farm plans.

These carbon farm plans are already making a positive difference for ranch operations and management. Albert Straus, owner of Straus Family Creamery, is one of three farmers and

ranchers who have partnered with MCP to establish three demonstration farms. "I had been looking to establish a baseline for our farm and, as a business Strauss Family Creamery's mission is to make family dairy farms viable," says Albert. "Part of that is to improve soil conditions." Albert's next steps include putting up hedgerows and pasture fencing to improve herd rotation through fields. Albert is pleased with the MCP's work: "Quantifying our efforts, including the role of methane digesters, helps tell the story of our farm—and area farms—to reduce GHG emissions and work on climate change," he adds.

## Welcomed support emerging

The real challenge, however, is securing the support needed to do carbon farming at a scale that can make a difference to the climate. Fortunately, the California Department of Food and Agriculture just launched its Healthy Soils Program, which will provide over \$6.5 million of direct financial support to producers to implement a range of carbon beneficial practices this year. Several counties, including Marin County, have integrated agriculture into their climate action plans, supporting the voluntary implementation of carbon beneficial practices to address climate change and drought. Several agricultural practices, including compost application to rangelands, have been approved for use and, along with voluntary carbon markets, including GHG Reduction Exchange administered by the California Air Pollutions Control Officers Association, are putting that support in place.

Climate change is an all hands on deck crisis, and ranchers and farmers bring a passion to their relationships with their lands and soil. With the right level of support to them, we can make it.

The three demonstration carbon plans cover a combined 2,400 acres. When fully implemented, more than 67,000 metric tons of carbon (CO<sub>2</sub>e) will be sequestered in farm soils. This is nearly 70% of Marin County's annual goal for GHG emission reductions

Torri Estrada is Executive Director and Director of Policy at the Carbon Cycle Institute. This article first appeared in Grown in Marin News. For more information about the Marin Carbon Project, visit [marincarbonproject.org](http://marincarbonproject.org)



# LOVE LITTER

Wet or damp litter is a critical factor in footpad dermatitis and other health problems in poultry

Litter management is a vital component of managing the health and welfare of poultry. Ammonia released from poor litter can lead to conditions such as breast blister, hock burn and footpad dermatitis, as well as diseases and conditions like malabsorption syndrome, infectious bursal disease, bacterial infections and respiratory disease. Litter management in pasture-based systems presents problems, particularly in winter when the weather is colder and litter is more likely to become wet.

The cause of high moisture litter may be more complex than simply a failure to put enough dry litter in the house. Stocking density, ventilation and condensation, water provision, depth and type of litter are all associated with litter quality. Feed quality can also play an important role, with greasy capped litter (resulting from too much fat in the feed or feed of poor quality) and excessive nitrogen in the litter being notable problems.

Litter has a number of important functions in poultry, including providing thermal insulation, moisture absorption, making a protective barrier from the ground and—importantly—allowing birds to exhibit natural scratching behaviours. Litter should be able to absorb moisture, but also dry out quickly.

Pine shavings have long been the litter of choice for poultry keepers, although in some areas it is becoming difficult or costly to obtain and is being replaced by (the less effective) sawdust.

Regionally, rice hulls and peanut hulls are often used as litter. Straw is another common litter material, particularly in Europe, although wood shavings generally provide a better litter substrate. (Chopped straw is preferable and more absorbent than long straw.) Recycled paper products have received a lot of research and development, but have not had a great deal of acceptance, as it absorbs moisture but does not dry out easily. Sand is being tested in southern climates.

Water drinkers are frequently a source of dampness, either from leakage or from birds spilling water. Using small cups instead of bell drinkers can reduce litter dampness, as can the use of water nipples. The number of drinkers is also important, as too few drinkers can cause excessive crowding and competition around the equipment that may cause an increase in water spillage and litter dampening. Drinkers that are too low or have the water pressure set too high can also increase the risk of wetter floors.

Finally, wet, muddy ranging areas, especially around entrances to the house, can encourage excessive moisture, particularly during wetter months. Placing mats around the pop holes and covering muddy areas with sand or wood chips can reduce problems.

*Article adapted from Farm Health Online. For more information about practical, science-based advice on high-welfare livestock management, visit [farmhealthonline.com](http://farmhealthonline.com)*

## KEY POINTS

Dry, friable litter is crucial to reduce welfare problems

Wood shavings generally provide the best litter substrate

Top up litter at least once per week

Moldy litter should never be used

Putting straw down first and then wood shavings can help stop litter moving and leaving bare patches

Moving birds from wet to dry litter conditions can result in rapid healing

Use small cups instead of bell drinkers, or install water nipples

Monitor the number of drinkers to minimize competition

Cover muddy areas near the house with sand or woodchips

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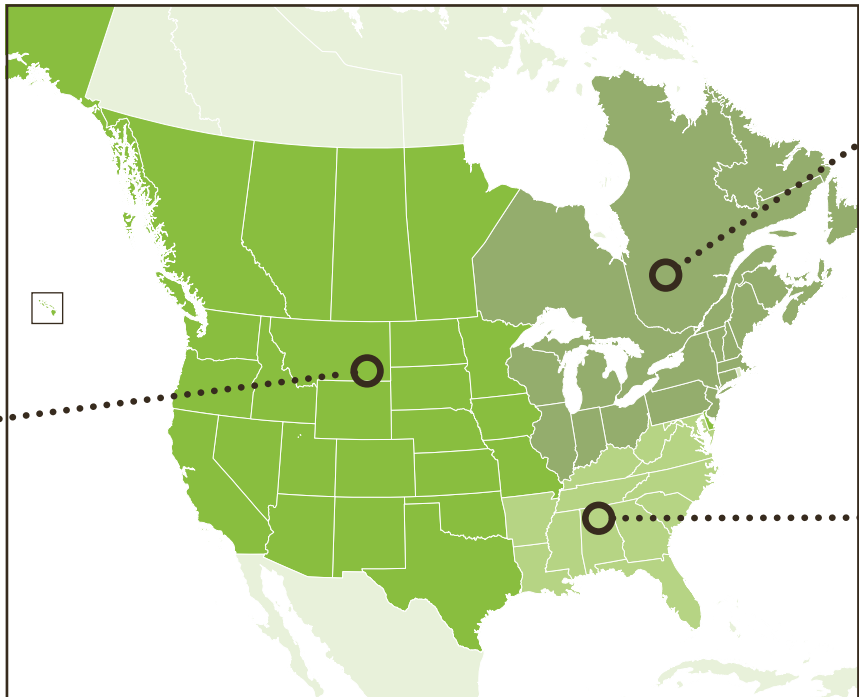
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WEST REGION  
**Amanda Hull**  
520-441-6482  
Amanda@agreenerworld.org

## Your regional point of contact

From Alaska to Wyoming, Alberta to Saskatchewan, our outreach team offers a one-stop shop for farmers, ranchers and food businesses!



NORTHEAST REGION  
**Katie Amos**  
717-412-1701  
Katie@agreenerworld.org



SOUTHEAST REGION  
**Callie Casteel**  
931-548-0664  
Callie@agreenerworld.org

## STAY UP TO DATE WITH FOCUS ON FARMING

Focus on Farming is our FREE monthly email dedicated to farmers, ranchers and allied professionals.

Complementing *Sustainable Farming*, our Focus on Farming email keeps you informed about AGW's current activities, including new services and technical advice, as well as related external news, media coverage of farmers and ranchers in the program, events and farmer-to-farmer sales.

Interested? You can sign up at [animalwelfareapproved.us/sign-up-for-our-mailing-list](http://animalwelfareapproved.us/sign-up-for-our-mailing-list)

Alternatively, call **800-373-8806** to add your email to the list. You can unsubscribe at any time.



MINE SUAREZ (x2)

## Services

### Need advice?

If you have a question about our farm standards or certification procedures, just get in touch! We also offer a range of *Technical Advice Factsheets*, packed with practical information on numerous topics—from record keeping and biosecurity to best practice castration or avoiding tail docking.

### Marketing support

Let our label design team create a high impact, professional food label—at no charge! We also offer a variety of low cost marketing materials to farmers, ranchers and food businesses—including quality metal signs, food labels, vinyl banners (good for farmers' market stalls), point-of-sale brochures and more!

### Is your farm profile up to date?

To help raise awareness about your business, we upload a short profile about every farm and ranch on our website. If you are new to the program the outreach team will be in touch. And if you ever feel your profile needs updating, just contact your regional coordinator.

### Got some news? Share it!

We write a dedicated press release for every farm or ranch that joins our programs. But if you're launching a new product or hosting a farm event, we'll do our best to spread the word through our social media and communications networks.

### Online directory

Our searchable online directory is the single most popular area on our website, helping thousands of visitors find suppliers of Animal Welfare Approved, Certified Grassfed by AGW and Certified Non-GMO by AGW products every year.

### Sign up for monthly e-news

Our monthly *Focus on Farming* email keeps you up to date with relevant news and information, as well as our program of activities and events.

For more information about our services—including free label design—visit [animalwelfareapproved.us](http://animalwelfareapproved.us) or call **800-373-8806**

## Programs

### Certified Animal Welfare Approved by AGW

Acknowledged by Consumer Reports as the *only* "highly meaningful" food label for farm animal welfare, outdoor access and sustainability, Animal Welfare Approved (AWA) is an independent, non-profit farm certification program—and one of the top 5 fastest growing certifications and label claims in North America.

A Greener World's flagship certification, AWA is the only farm certification that guarantees animals are raised outdoors on pasture or range for their entire lives on an independent farm using sustainable agriculture methods, and is one of only two certifiers in the U.S. to require audited, high-welfare transport and slaughter practices.

### Certified Grassfed by AGW

The *only* grassfed certification and logo in the U.S. and Canada that guarantees meat and milk products come from animals fed a 100 percent grass and forage diet, raised outdoors on pasture or range, and managed according to the highest welfare and environmental standards on an independent farm.

Certified Grassfed by AGW is an optional, additional accreditation for farmers and ranchers who are meeting AWA standards, and enables businesses to clearly differentiate themselves in the marketplace.

### Certified Non-GMO by AGW

Certified Non-GMO by AGW is the only food label in North America that helps consumers identify non-GMO (or genetically engineered) products and support high-welfare, environmentally sustainable food animal production.

Available to farmers, ranchers and food producers, the Certified Non-GMO by AGW label guarantees food products are not only produced without GMO feed, supplements or ingredients, but is the *only* non-GMO label to offer further assurances about animal welfare and environmental sustainability. The Certified Non-GMO by AGW label is an optional addition for AWA businesses.

**"I just started with AGW and, because of AGW's press release, I was featured in a local newspaper, which was critical for my business."**

Benji Anderson,  
Anderson Farms,  
GA

**"I'm a huge AGW flag-waver. What they do is unparalleled in the industry. They do so much to support the kind and gentle farming approach, as opposed to the industrial model."**

Greg Newhall,  
Windy N Ranch, WA

**"Our latest retail contract wouldn't have happened without AGW, so I just wanted to let you know how much I appreciate you."**

Mac Baldwin,  
Baldwin Family  
Farms, NC





# FURTHER READING

A Greener World publishes a range of information materials for consumers, farmers and ranchers, and food businesses

## LIES, DAMN LIES

Politicians and industrial agriculture and GM industry representatives frequently claim that we need to increase global food production by 50 percent by 2030—and double food production by 2050—to feed a future population of 9 billion people. Published in partnership with the UK's Soil Association, *Lies, Damn Lies...* The false facts about food production investigates the sources of these two key statistics, and reveals how politicians—and the results might surprise you ...

## A BREATH OF FRESH AIR

Although pasture-raised cattle might have a slower growth rate and produce more methane per pound of meat, this is more than offset by the overall benefits of the entire pasture-based production system. *A Breath of Fresh Air: The truth about pasture-based livestock production and environmental sustainability* confirms that the most sustainable livestock production comes from pasture.

## THE GRASSFED PRIMER

Written in an accessible and informal style, *The Grassfed Primer: Your guide to the benefits of grassfed beef* provides an informative, easy-to-digest introduction to the benefits of grassfed and pasture-raised beef for animal welfare, the environment and, of course, for human health. The report includes extensive scientific references for further reading and research.

## FOOD LABELS EXPOSED

Revised and fully updated for September 2017, *Food Labels Exposed: A definitive guide to common food label terms and claims* is an indispensable tool for anyone interested in making the right food choices. Factual definitions for over 100 of the most common food terms and claims, with a simple, user-friendly symbol system. Indispensable.

**Lies, Damn Lies...**  
The false facts about food production

**A Breath of Fresh Air**  
The truth about pasture-based livestock production and environmental sustainability

**The Grassfed Primer**  
Your guide to the benefits of grassfed beef

**FOOD LABELS EXPOSED**  
A definitive guide to common food label terms and claims



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## TAKING PICTURES OF YOUR FARM

Good photos are increasingly important for businesses—especially farms and ranches. But taking quality shots—particularly of animals—isn't easy. Written with AGW's go-to photo-

grapher, Mike Suarez of Gorilla Byte Media, *Taking Pictures of Your Farm* will help you take better photographs on your farm or ranch for use in social media, websites and other promotional materials.

**Taking pictures of your farm**

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All reports are available to download free at [agreenerworld.org/library](http://agreenerworld.org/library). You can also buy paper copies at [animalwelfareapproved.us/merchandise](http://animalwelfareapproved.us/merchandise)

Soil Association

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## BEEF CATTLE, Albermarle, NC

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## BEEF CATTLE, Bellville, TX

WANTED: Seeking AWA feeder steers, ideally not too far from central Texas. If available, please email [margot.heard@snschools.com](mailto:margot.heard@snschools.com)

## BEEF CATTLE, Buskirk, NY

FOR SALE: Belted Galloway heifers, bulls, cow/calf pairs. 4 yearling heifers and 4 yearling bulls, and cow/calf pairs of this summer's calves. AWA closed herd. All from registered sires. Call 518-677-3677 or [cynthiablakemore@gmail.com](mailto:cynthiablakemore@gmail.com)

## BEEF CATTLE, Danville, AR

FOR SALE: 14 x 8-9 month-old certified grassfed steers and heifers. Weaned and vaccinated. Will negotiate. Call 479-857-1883.

## BEEF CATTLE, Enid, OK

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## BEEF CATTLE, Hayesville, NC

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## BREEDING SHEEP, Booneville, AR

FOR SALE: Katahdin rams lambs (born Feb 2017) with Estimated Breeding Values through the National Sheep Improvement Program for parasite resistance. Also good maternal traits. Price: Commercial, \$200; Registered, \$300-500. Call 479-675-3834 or email [joan.burke@ars.usda.gov](mailto:joan.burke@ars.usda.gov)

## DAIRY CATTLE, Danville, VT

FOR SALE: AWA Registered Milking Devon heifer (born June 2016). Excellent conformation, long body, well-muscled, teats look good. Trained to electric fence/netting. Call 802-734-0180 or email [farmer@starkhollowfarm.com](mailto:farmer@starkhollowfarm.com)

## LAYING HENS, Kenyon, MN

WANTED: If you have laying hens that want to be mothers I want them! Large reliable setters preferred. Call 612-584-8091 or email [m.driscoll66@yahoo.com](mailto:m.driscoll66@yahoo.com)

## PIGS, Danville, VT


FOR SALE: Four AWA piglets (for finishing), 16 weeks; One pure bred (registerable) Tamworth sow; One 2-year-old pure bred (registerable) Tamworth gilt; One hybrid vigor Tamworth x Berkshire gilt. All trained to two strand electric fence. Call 802-734-0180 or email [farmer@starkhollowfarm.com](mailto:farmer@starkhollowfarm.com)

## PIGS/BEEF CATTLE, Pilot, VA

WANTED: AWA feeder pigs and steers. Willing to drive 2-3 hours from Floyd, VA. We require no grain fed for the cattle, and raised to AWA standards. Happy to talk about using your farm for our production in the year 2018. If available, please call 804-387-5175 or email Greg Sazonov at [happyroosterfarm@gmail.com](mailto:happyroosterfarm@gmail.com)

*A Greener World can accept no responsibility for the quality or suitability of listed advertisements. For guidelines about Farm-to-Farm Sales, visit [animalwelfareapproved.us/farmers/classifieds](http://animalwelfareapproved.us/farmers/classifieds)*






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## Certification news

# NO SMALL CHANGE

We're proud to offer free AWA audits. Help us keep it that way, says Tim Holmes

The AWA audit is free to farmers who want to become certified according to the highest standards of animal welfare and environmental protection in the world. We are proud to offer this unique service. But it isn't cheap.

### Time and money

Of course, being free offers many benefits for farmers—and consumers. Any commercial farm or ranch in North America can obtain our world-class certification without cost being a deciding factor, saving your business hundreds—if not thousands—of dollars every year. (Just take a look at what some of our competitors charge.) Because AWA has no financial incentive to certify farms that do not meet our standards, the AWA logo offers unrivalled integrity and trust to the consumer.

While we are free to our farmers, we must make the most efficient use of the funds we have to cover all audit and operational costs, including auditor fees, airfare, hotels, rental car and subsistence. These costs can—and do—quickly add up. And the more successful we are, the more money we need to raise.

Being the most trusted and highly respected farm certification doesn't come cheap. While our policies and rules (and our accreditation to ISO 17065) ensure the highest quality and consistency of certification, they can work against cost control. For example, we have rules that limit the number of back-to-back audits any individual auditor can do at the same farm. Once this number is reached, another auditor, usually from a different region, must travel to the area and audit the farm before the first auditor can return.

### Help us help you

Your cooperation in scheduling and carrying out the audit is crucial to maintaining the free AWA program. To help us make the best use of our resources we ask you to consider the following:

**Reply promptly** when our auditor contacts you to arrange the audit.

**Help us to bundle audits.** We send auditors to carry out multiple audits in a tight geographical region and timeframe to avoid the costs of numerous return trips to the same area. This may mean the timing is not always perfect for you, but please work with us as far as you can to fit within our auditor's timetable for your area.

**Changing audit date.** Only change the agreed audit date when it is absolutely necessary. While we understand some situations are unavoidable, such as a death in the family or jury duty, we cannot postpone an audit because you are cutting hay or weather conditions are not at their best. If you must change the agreed audit date, let us know as soon as possible so we can rearrange the auditor's schedule and someone else can benefit.

**Be ready for the audit.** Although we are a free program, there is one cost for participation, and that's your time. We can reduce the time the audit takes—and the time you have to take out—if you have everything ready for the auditor, such as up-to-date records, plans, feed tags and so on.

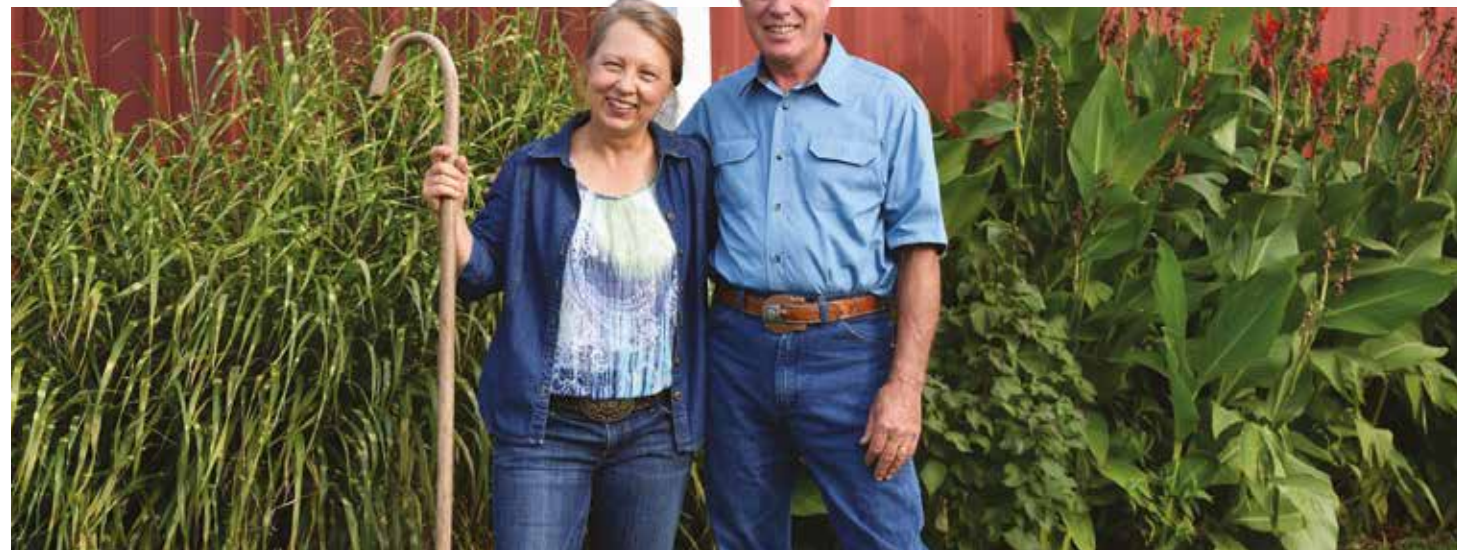
**Remember:** if we cannot audit your farm within the necessary timelines, we will have no choice but to suspend or terminate your certification. We may also ask you to cover expenses if you reschedule the audit or you reapply to the program.

We know you value the AWA program and that the program adds value to your products. All we ask is that you work with us to schedule your farm audit during the period requested, so we can keep our costs down and offer free certification to more farms. In return, you benefit from a world-leading farm certification that would otherwise cost you hundreds—if not thousands—of dollars every year. Thanks in advance for your cooperation.

*Tim Holmes is Director of Compliance with A Greener World*



## 🌱 Meet the farmer



COURTESY SHEPHERD'S CROSS INC (x2)

# CROSS TALK

Dr. Diane and Peter Dickinson raise AWA sheep for meat and wool and AWA, Certified Grassfed by AGW beef cattle outdoors on pasture at Shepherd's Cross Inc. in Claremore, OK. The Dickinsons have been farming for 25 years.

### Tell us about your farm ...

Peter and I were both raised on farms and we had a longing to raise our own family on a farm. We saved our pennies after college and eventually purchased our farm. My career as a licensed veterinarian led me to my work on sheep and goats. We started with a flock of 12 sheep in the early 1990s and the flock has grown to several hundred. We developed our own breed of sheep called Shepherd's Cross, which can thrive on grass and is a great producer of meat, wool and milk. We also raise Certified Grassfed by AGW Dexter beef cattle. We produce all our own chemical-free hay, as well as pecans and black walnuts. The farm is a wool buying station and a black walnut buying and hulling station. We have a farm museum, a Biblical garden and a wool processing mill for our own wool fibers, and offer tours and classes to the public.

### Why did you choose AWA/AGW?

Natural, healthy, outdoor living in grassy meadows for the livestock, no chemical usage on the farm, and being kind, caring and protective of the livestock are paramount principles we adhere to on the farm. AWA and the new grassfed certification seemed a natural progression, and we appreciate the quality standards.

### Sustainable farming principles: why do they matter?

Under good management, sheep improve the land. A good shepherd cares about pasture improvement and environmental improvement, so that shepherding and farming can continue to future generations. Leaving a positive impact on our culture for future generations is imperative.

### How can the market for AWA products be improved?

By educating the public concerning the truth about food labels. AWA is a label that sets an industry standard and is synonymous with integrity.

### What is the biggest threat to the sustainable farming movement?

Labels that are not truthful and have hidden meanings. These labels are misleading and giving people a false sense of security.

### What do you love most about what you do?

Watching the sun rise and set every day, while tending to the needs of the livestock we love.

### What do you find most frustrating about what you do?

The lack of appreciation by the American public.

### What's your vision for the future?

We want to be a bridge between the farmers of yesteryear and the farmers of future generations. Without farmers for future generations in our nation, we have no nation.

### AT A GLANCE

**Farm:** Shepherd's Cross, Claremore, OK

**Certification/date:** AWA 2011, Certified Grassfed by AGW for beef cattle 2015

**Size:** 120 acres

**Soil type:** Dennis Bates Complex

**Altitude:** 615 ft

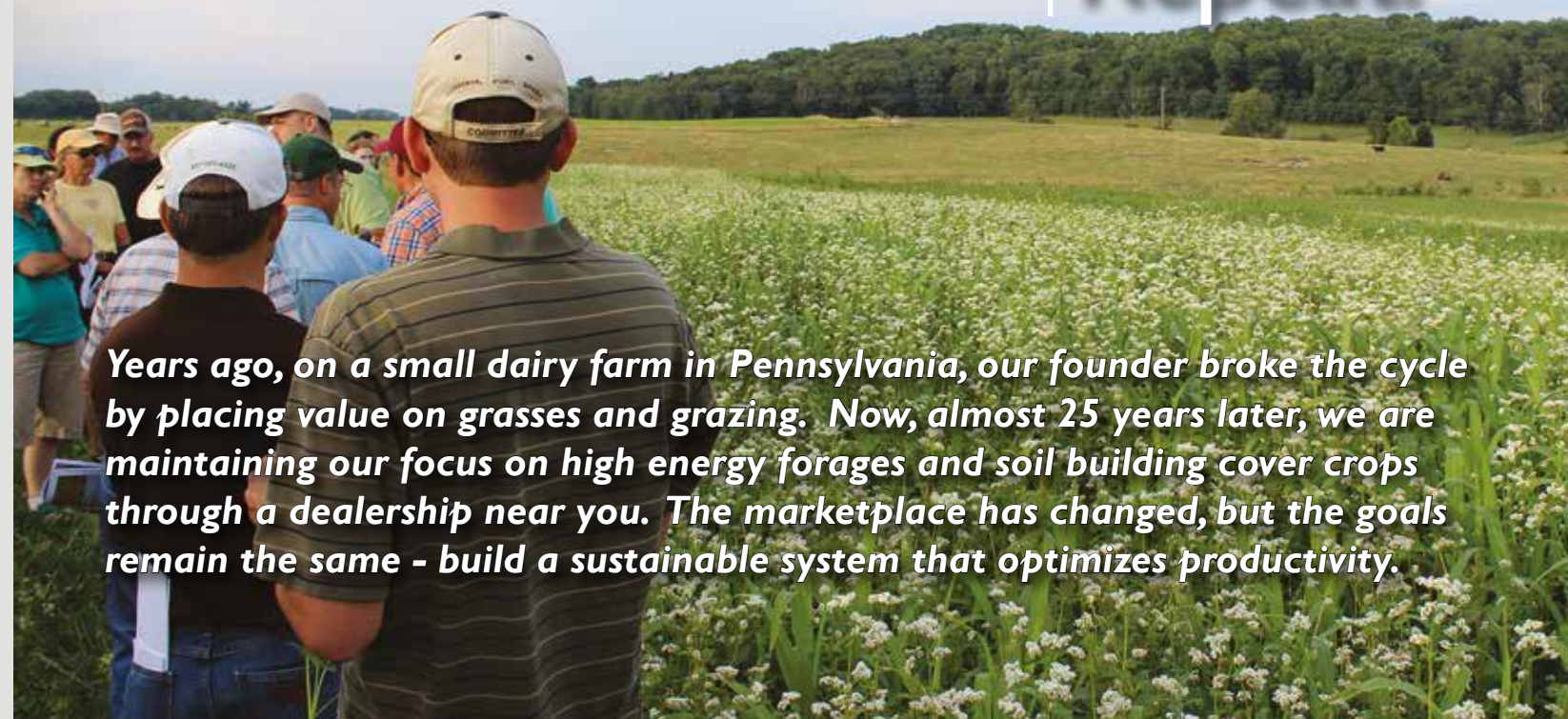
**Annual rainfall:** 44 inches

**Enterprises:** AWA Dexter cattle and Shepherd's Cross Landrace sheep, selling beef, lamb, mutton and wool products.

Find out more at [shepherdscross.com](http://shepherdscross.com)



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"AWA certification is expanding the market opportunities available to us by putting our eggs a step above the competition, helping us get into bigger and higher-end restaurants."

TYLER GORDON, Gordon Family Farms, Indiana

USDA NATURAL RESOURCES CONSERVATION SERVICE

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