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Regenerative Agriculture

**What is regenerative agriculture,
and how is it relevant to organic?**



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Regenerative Agriculture

What is regenerative agriculture, and how is it relevant to organic?

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Replenish, Reinvigorate, Rejuvenate

Reading this issue's feature story on the emerging "regenerative" agricultural movement caused me to reflect on the word "regenerate." What does it mean? The first synonym I find in my trusty thesaurus is "rebirth." Other synonyms include "replenish," "reinvigorate," and "rejuvenate."

Discovering these powerful synonyms brought to mind my need to regenerate my personal well-being. During the worldwide pandemic over the last few months, I have felt depleted at times. My friend and teacher asked me, "What are you doing to fill your well?" She reminded me that I cannot give to others when my own well is dry. My mental, physical, and emotional well-being requires that I remember to rest and re-nourish.

My need to regenerate helps me empathize with our soils and natural resources. I imagine most of our fields and rangelands would appreciate more rest and nourishment from the hard work we ask them to do. The organic movement has worked tirelessly to build awareness of the principle that we must return what we take—we cannot sustain crop production and raise healthy livestock without replenishing the health of our soils.

Now, an even broader movement of farmers, businesses, and changemakers are bringing regenerative practices into focus. They are building on the organic movement and challenging us to ask what else we can do to replenish what has been depleted. How can we not only regenerate the health of our soils but also the health of our communities? How can we realize the potential of organic farming practices and make soil our ally in storing carbon and combatting climate change?

In my current favorite read, *Braiding Sweetgrass*, author Robin Wall Kimmerer explains a canon of indigenous principles called the Honorable Harvest, which asks us "to give back in reciprocity for what we have been given." Kimmerer explains:

"A harvest is made honorable when it sustains the giver as well as the taker."

I hope that this issue's feature leaves you feeling encouraged by the collective effort to regenerate our soils and re-establish a more honorable harvest. I also sincerely hope that you are finding ways to replenish, reinvigorate, and rejuvenate your own well-being.



Kelly Damewood

Kelly Damewood
CCOF CEO

Issue Contributors

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Ellen Vessels is a freelance writer and copy editor with a passion for environmental issues, the outdoors, and social justice. She is a staff writer covering small business news and generational marketing for TheAmericanGenius.com, and an assistant to fermentation revivalist and author Sandor Katz. She has written for outdoor magazines and environmental nonprofits, and formerly served as a project manager for Florida Organic Growers.

Vessels is a self-taught herbalist who grows organic herbs and maintains a community apothecary. When not writing, Vessels performs original music and puppet shows. A sampling of her writing can be found at clippings.me/EllenVessels, while her music can be found at helenskeleton.bandcamp.com.

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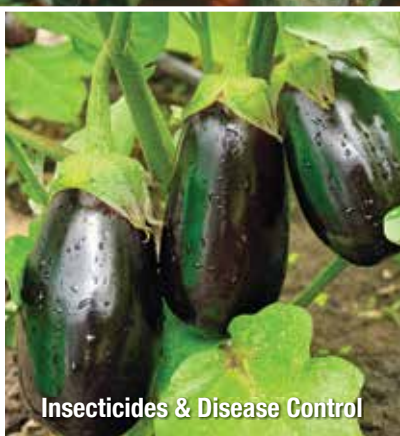
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Organic Distilleries Shift Production to Hand Sanitizer

Twenty seconds. Happy birthday to you, two times through. During the challenging times of COVID-19, we are reminded that washing our hands is one of the necessary ways we protect both ourselves and our communities. It is not always possible to wash our hands; hand sanitizer has become an essential part of our daily lives.

Hand sanitizer is regulated and typically only produced by drug manufacturers. On March 27 the FDA published temporary guidelines for hand sanitizer production. Distilleries have permits to buy or make ethyl alcohol, which they can use as the main ingredient in the World Health Organization (WHO) formula that the FDA provided in their guidance. The other ingredients in the approved formula include glycerin and hydrogen peroxide. The formula is simple, but ethyl alcohol is the toughest ingredient to find. To meet the growing need, several CCOF-certified distilleries have reduced spirit production and filled their stills with hand sanitizer.

Humboldt Distillery is in Fortuna, California, nestled along the northeast shore of the Eel River. I spoke with Abe Stevens, who founded the distillery in 2012, inspired by his love for Humboldt County and his affinity for chemistry. While Humboldt Distillery typically fills their stills with vodka or rum made from organic cane sugar, reduced demand caused by recent restaurant and bar closures has given them the capacity to produce hand sanitizer in addition to their spirits.

The entire hand sanitizer manufacturing process takes about a week to complete, and Humboldt Distillery can make 250 gallons of hand sanitizer per batch. Having three pot stills as well as a continuous column still gives them a high capacity relative to the size of their distillery. "We've made about 700 gallons of sanitizer to date [end of April], which is over two tons worth. So far, it's all been donated for free, mostly to first responders and health care workers, but some also to retail businesses that remain open as essential services. We've been happy to cover the cost of production ourselves without any outside funding, but that does have its limits and we may consider selling a portion of our next batch."

The process has included some obstacles. "We did have some difficulty finding glycerin locally for our first batch, and a local soap company was kind enough to donate some for free. Since then we've been able to order more ourselves, but there are still other supply issues getting packaging materials. For instance, there is a shortage of the typical plastic pump-style dispenser containers you often see with sanitizer and liquid hand soap, and we have been unable to get any. So we've just been using our standard glass vodka bottles to distribute so people can at least use it to refill their existing containers."

Stevens expects there to be continued challenges for the distilled spirits industry, due in part to economic uncertainty. For now, Humboldt Distillery has been able to continue employing eight out of nine of its workers and is fortunate to have received continued support from their current customers. The future is unknown, but Humboldt Distillery is doing what they can to support their community. Learn more about Humboldt Distillery at www.humboltdistillery.com.

Additional CCOF-certified distilleries have been producing hand sanitizer, and I gathered details from a few of them. In total,

they have produced over 4,800 gallons of hand sanitizer so far, which adds up to over six million sets of sanitized hands.



Bethel Rd. Distillery (owned by Castoro Cellars)

Bethel Rd. Distillery in Paso Robles, California, teamed up with a label designer and label printer, who both donated their services. Distiller Max Udsen noted "It has been a challenge to source any type of spray bottles, small or large, so we decided to focus on what we can readily source—wine bottles." They have made contributions to local shelters and frontline workers, and they make it easy for the public to donate sanitizer online. Castoro Cellars produces wine, and their Bethel Rd. Distillery makes organic brandy with estate grown grapes. Learn more at www.bethelrddistillery.com.

Central Coast Distillery

Central Coast Distillery in Atascadero, California collaborated with a local pharmacy to develop sanitizer using their distilled ethyl alcohol as the base. They are donating 50 percent of all production to frontline workers and the local homeless shelter. Owner and distiller Eric Olson takes a culinary approach to making spirits, sourcing through local farmers, ranchers, and beekeepers. Their Forager Gin is certified with CCOF, and has notes of Mignonette pepper, coriander, and juniper berry. Learn more at www.foragerspirits.net.

Hanson of Sonoma Distillery

At Hanson of Sonoma Distillery in Sonoma, California, wine is distilled for three days to produce ethyl alcohol for hand sanitizer, the same starting process as their flavored vodka.

Their first donations were to Marin County Sheriff's office and to PG&E workers. The sanitizer is available for the public to purchase and is matched by Hanson with a donation to the San Francisco Marin Food Bank. When not making sanitizer, they produce several types of vodka from distilled wine, including original, cucumber, Meyer lemon, mandarin, and habanero flavors. Learn more at www.hansonofsonoma.com.

J.J. Pfister Distilling Company

The team at J.J. Pfister Distilling Company in Sacramento, California, is producing alcohol distilled from grains, and they have hired restaurant professionals currently out of work to ramp up production. Their distilled spirits are made from organic produce sourced from the Klamath River Basin and the Sacramento Valley. Before they began producing hand sanitizer, they introduced their first vodka, distilled from organic potatoes, in 2017. It has since been joined by whiskey, gin, and rum, among others. Learn more at www.jjpfister.com.

A Promising Model for Community Dairies: Straus Family Creamery

Ellen Straus served tea and cookies when her son Albert presented a business plan to the family about transitioning their dairy to organic and developing their own creamery. This was 26 years ago, when Straus' vision of creating a brand for sustainable organic farming that revitalized rural communities and family farms was unprecedented. Straus Family Creamery was the first ever certified all-organic creamery in the United States and the first ever certified dairy farm west of the Mississippi River. In the past decades, Straus Family Creamery has developed truly innovative models to serve their local communities and help reverse climate change, in spite of economic challenges facing dairies today.

Though most students across the country receive conventional milk in paper cartons with their school lunches, close to 6,000 students in 13 public schools in five Bay Area school districts are now served Straus organic milk from dispensers. By using



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five-gallon milk dispensers from which students obtain their serving size of choice, some districts have actually saved money by reducing milk waste. The effort to get organic milk dispensers in schools was spearheaded by Miguel Villarreal, former director of food and nutritional services in Novato, California, who estimated that five to ten gallons of milk were wasted daily in every Pre-K through fifth grade school. Despite the decreased food waste in this new system, Albert confirms it remains challenging to continue to provide organic milk in schools due to the school bidding system required for suppliers. Straus Family Creamery milk costs more because they pay farmers the true cost of producing certified organic milk in a sustainable way. The bidding war of school commodity purchasing does not tend to consider the true cost of food production and many schools will opt for the lowest price. Albert wants to create alternative purchasing models wherein we consider our food system differently and support truly evolving our communities. Students are now enjoying increased nutritional benefits of organic milk, supporting local sustainable businesses, and saving the school districts money by not discarding unnecessary milk. The model has proven to be a win for all parties.

While Straus Family Creamery milk fuels children in schools, the energy produced on the Straus Dairy Farm* is fueling on-farm vehicles, including an electric feed truck that feeds the cows that, in turn, power the truck. Companies not typically associated with agriculture, such as BMW Group, are recognizing the value of energy produced on dairy farms. Through California's Low Carbon Fuel Standards (LCFS) Program, the Straus Dairy Farm and BMW Group are able to forge a collaboration and receive incentives. The California Air Resources Board is providing an economic incentive to dairies interested in harnessing their methane into renewable energy through its LCFS program, where producers of fossil fuels used for California transportation must trade credits from low-carbon fuel makers, thereby subsidizing the cost of producing low-carbon fuels.

Albert is in the process of implementing a pilot tank-based methane digester that digests manure in 2 ½ to 5 days instead of the standard 30 days under his existing covered lagoon digester installed in 2004. This system is significantly more compact and relatively less expensive, and Albert expects a two to five year return on investment on this system due to the LCFS partnership with BMW Group. Albert is also demonstrating an economical farming model that promotes benefits to the environment and provides incentives and value to dairy farms. Under the LCFS program, a dairy farm can earn 5 to 10 times more revenue for selling their renewable energy credits to a third party like BMW Group compared to a standard power purchase agreement with a utility buyer. This is a replicable and sustainable model for other dairies in California, making it more likely that small-scale organic dairy farmers will invest in biodigesters. These technological innovations are heralded by Albert as an effective means to help combat climate

change. He is also working with organic certifiers and other reporting agencies to help streamline organic certification and make the paperwork more manageable for farmers.



At the Straus Dairy Farm, Albert has implemented computer systems to understand the cost of production and how to be more efficient and profitable. Albert is also planning to use the State of California's cost of production worksheet for the group of dairies providing organic milk to the creamery to help benchmark and improve financial viability. To further enhance the Pasture Rule verification, Albert is in collaboration with scientists, including one who uses NASA satellite imagery that measures pasture growth. He hopes the data can be utilized as a tool for both producers and certifiers to monitor pasture and grazing activity, and to demonstrate the benefits of carbon farming using pasture-based animals.

While Straus Family Creamery has innovated their practices over the past decades, they continue to prioritize their relationships with partnering dairies. Milk checks are delivered in person twice per month. Meetings are held quarterly to discuss product sales and any challenges the dairies are facing that need to be addressed, and to determine the volume needed for the next quarter of production based on the creamery's product sales. Initially farmers were recruited with assistance to help them transition to organic practices, while now newer dairies that join the creamery tend to be already certified as organic practices have become more prevalent. With organic milk in local schools, methane fueling nearby vehicles, and dairies surviving in the face of a national dairy crisis, it appears that Straus Family Creamery has established a truly sustainable and community-based way of life that could serve as a replicable model for other regional dairies. The risk-taking, pioneering, and community building that were necessary in these past 26 years to make that happen gives promise to more decades of sustainable dairy production to come. One might ponder that if Ellen Straus were serving tea and cookies at her kitchen table today, that they would be accompanied by Straus Family Creamery organic milk.

**Albert's farm is one of twelve certified organic family dairy farms providing milk to the Creamery.*

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CCOF Foundation Helps Anheuser- Busch Go Organic

Beginning in 2003, the CCOF Foundation hosted Go-Organic, a series of workshops and peer-to-peer mentorship opportunities across California, funded by the California State Water Board and the Clarence E. Heller Foundation. The workshops were designed to help conventional farmers transition to organic by educating growers about the organic rule and soil health and by unpacking cultural barriers to transition. Between 2003 and 2006 the 63 workshops helped transition 4,000 acres to organic. In 2015, funded by the USDA Sound and Sensible Initiative, the CCOF Foundation revived the Go-Organic program, creating a self-assessment for conventional farmers interested in converting to organic, and facilitating workshops throughout California on regional crops such as berries, stone fruit, vegetables, and grapes. These early programs established the CCOF Foundation as a leader in helping farmers from diverse backgrounds transition to organic practices.

Fast forward 17 years. The CCOF Foundation is now using similar educational programs to help one of the world's largest beverage companies to realize the goal of producing an internationally recognized certified organic beer. Brewer Anheuser-Busch began organic beermaking two years ago with the launch of their certified beer, Michelob ULTRA Pure Gold.

You may have seen the hip Pure Gold ad during the Super Bowl last February, featuring people dancing, playing sports, and cooling down at a beach party with the help of the light gold beer. The advertisement promised that for every six-pack of beer purchased in the United States, Anheuser-Busch would transition six square feet of farmland to organic. The CCOF Foundation is a key partner in the 6 For 6-Pack Contract for Change campaign and is supporting this promise through education, technical advising, and grant making.

Education and Technical Advising

At the beginning of March, Foundation Director Jessy Beckett Parr traveled to Idaho Falls, Idaho to host a week of workshops on organic farming for the Anheuser-Busch agronomy team and the farming community it serves. The first three days were an intensive on organic farming with a focus on barley, and were also attended by Idaho State Cooperative Extension, the Idaho State Department of Agriculture Organic Program, and the Idaho Barley Commission.

To co-lead the trainings, CCOF partnered with the Organic Agronomy Training Service (OATS, which is part of the GROW Organic program under the Organic Trade Association) and Nate Powel-Palm, a CCOF inspector and organic grain and livestock farmer from Montana. Mallory Krieger, national program director for OATS, co-designed and co-facilitated the trainings.

The Anheuser-Busch agronomy team, 15 members strong, supports hundreds of contract farmers throughout Idaho, Colorado, Utah, Montana, and North Dakota who grow hops and malt barley for their brewing operations. Some team members have decades of experience advising for Anheuser-Busch, and several members of the team come from families who farm malt barley. The agronomy team deftly integrated their historical growing knowledge with the new information about crop rotation, organic techniques for nitrogen building, weed control, and fertility management, and the terms and regulations of the organic standards.

After the three-day agronomy team intensive, the CCOF Foundation and partners held two one-day farmer trainings in Idaho Falls and Twin Falls for conventional farmers interested in hearing more about organic farming. The trainings were well attended. Participants heard from the Anheuser-Busch agronomy team, Nate Powel-Palm, OATS, CCOF, and veteran organic farmers from the local region about the necessary steps to transition. Many of the farmers who left the trainings are now interested in converting to organic practices.

The CCOF Foundation continues to support the Anheuser-Busch team as they assist their farmers in transition. Nate



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Through hands-on trainings, workshops, and seminars, the Organic Training Institute provides resources to aspiring and current organic professionals about the latest organic research and best production and marketing practices.

Our educational offerings for the second half of 2020 feature a diverse lineup of topics, including

- soil health
- marketing strategies for farms that sell directly to consumers
- trainings for farmers' market managers

Learn more about upcoming Organic Training Institute events at www.ccof.org/oti »

You can check out recordings of previous webinars in the CCOF Foundation webinar library.

Popular recordings include

- How to Get Ready for a FSMA Produce Safety Rule Inspection in California
- Organic 101 for Small and Midsized Farms Webinar
- FSMA Basics for Small and Medium-Sized Produce Farms Webinar

View recordings of past webinars at www.ccof.org/oti-recordings »

The Organic Training Institute's 2020 events are supported in part by funding from private donors, the California Department of Food and Agriculture, and the following entities within the U.S. Department of Agriculture: Agricultural Marketing Service, National Institute of Food and Agriculture, and the Risk Management Agency.

Powel-Palm has been hired to provide ongoing weekly support sessions for the agronomists and CCOF Foundation staff will publish recommendations for ongoing work within Anheuser-Busch to ensure the success of their organic initiative.

Grants for Organic Transition

In addition to providing education and technical advising, Anheuser-Busch committed \$500,000 in direct support grants to farmers who are transitioning to organic across the United States. The CCOF Foundation is facilitating the granting process with two applications periods, one in the spring and one in the fall of 2020. One hundred \$5,000 grants will support existing growers as they implement their Organic System Plan.

ELIGIBILITY:

1. Producers of all crop types eligible for organic certification are encouraged to apply. Please note, cannabis and hemp production are not eligible for funding.
2. Applicant must reside and farm in the United States (including U.S. territories).
3. Applicant must have a minimum of three years in production (3 Schedule F tax return required for application).
4. Applicant must demonstrate their intent to farm organically.
5. Grant funds may only be used to support the applicant's transition to USDA NOP certified organic production methods.
6. Applicant agrees to submit a final report at the end of the grant period and report on the organic status of their fields for the three years after the grant.
7. Applicant must be 21 years of age or older at the time the application is submitted.

FUNDING PRIORITIES:

1. farmers with at least five years of production experience
2. applicants who are underrepresented in the organic industry, including women, people of color, veterans, farmworkers, and people with disabilities
3. applicants who have demonstrated interest in organic production methods
4. applicants who have a plan, or who have identified a means to develop a plan, for transitioning to certified organic production
5. farmers who can demonstrate financial need
6. preference for farmers who are new to organic farming

For more information on grants for organic transition, please visit www.ccof.org/foundation.

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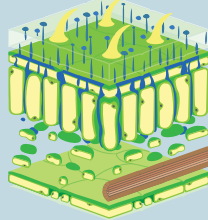
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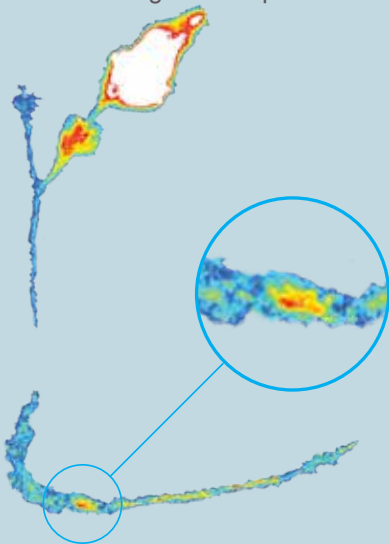
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Nimble Moves from a Quickly Adapting Chapter System

CCOF chapters provide a unique community venue for CCOF members to engage with each other and support CCOF's policy and programs work. Resilience and community building are the core of the chapter system and help producers adapt to meet the new demands of a rapidly changing world. Our chapters take a leading role in organizational governance, information sharing, and building community. The member-driven chapter system is central to CCOF's capacity to support and effect change.

While COVID-19 has forced chapters to push pause on in-person meetings, CCOF recently organized an all-chapter virtual roundtable to provide the opportunity for chapter leaders to connect and to help craft CCOF's COVID-19 member response plan. Virtual gatherings like the chapter leader roundtable give CCOF members a chance to share stories, challenges, and opportunities, and help to weave a tight-knit community "resilience fabric."

Chapter leaders are now engaging directly with chapter members by holding virtual meetings, sharing resources, and distributing a COVID-19 survey that has given chapter leaders, CCOF's policy team, and the CCOF Foundation important information about member experiences. This process has been invaluable as the teams coordinate with elected officials and partner organizations on COVID-19 relief.

This process has also helped CCOF share information about member experiences with partner organizations, amplify CCOF members' voices, and connect members with resources and opportunities like the Organic Training Institute's offerings on adapting marketing and business practices for a changing landscape. (Learn more at www.ccof.org/oti.) Many groups look to CCOF for information about the experiences of organic farmers, ranchers, and food processors. By participating in the chapter system, you can connect, share, seek advice and resources, and help CCOF's efforts to strengthen the organic community.

In addition to support from CCOF's policy team and the CCOF Foundation team, CCOF also provides incentive payments to chapters to help them hold in-person meetings and to nurture the chapter's capacity to advance mission-aligned causes. To help organic operations in need, several chapters have stepped up and donated to the Bricmont Hardship Assistance Fund. The Bricmont fund is the only one in the nation specifically

supporting any certified organic operation; 100 percent of donations go straight to organic producers in need. These donations contribute to the fabric of organic resilience. Find out more about the Bricmont fund at www.ccof.org/bricmont.

If you are motivated by the action and changes effected by CCOF's chapters, get ready for the approaching chapter election season for a chance to represent and serve your local organic community. The volunteer leadership roles provide valuable avenues to connect with and amplify organic producer voices. CCOF encourages members to step up and run for these vital positions, or to nominate folks who they think would thrive in these leadership roles.

The following chapters have upcoming elections this fall: Humboldt-Trinity-Mendocino, North Coast, Sierra Gold, South Coast, and Yolo. Look out for emails calling for nominations, followed by prompts to vote!

North Valley Chapter

The North Valley Chapter held a meeting at the Lundberg Family Farms headquarters in Richvale, California in February. Ryan Filmore of CCOF-certified Filmore Farms presented on walnut growing techniques, focusing on cover crops, orchard floor management, and irrigation. Filmore and other growers highlighted the importance of creative tool adaptation for weed management, including disc mowers with extra cushion, and dialing in the proper speeds for different sized trees to reduce damage while increasing efficacy and efficiency.

The chapter also held elections and CCOF congratulates newly elected Vice President Nisha Carrow, along with re-elected leaders Phil LaRocca, board representative and president, Bryce Lundberg, treasurer, and Herman Chen, secretary. The chapter also counts on the generous commitment of an executive committee to provide a wider perspective and aid in discussions. The North Valley Chapter appointed executive committee members are Ryan Fillmore, Darrell Wood, Alise Taylor, Armen Carlon, and Sally Shea.

Fresno-Tulare Chapter

The Fresno-Tulare Chapter held elections in January 2020. CCOF congratulates the elected leaders Steven Cardoza, board representative, Aaron MacAfee, president, Mason Parkinson, secretary, and re-elected treasurer, Eldon Thiesen. CCOF also thanks outgoing leaders Dwayne Cardoza and Vernon Peterson for their years of dedication to CCOF.

To learn more about how to participate in your chapter visit www.ccof.org/chapters or contact Adrian Fischer at afischer@ccof.org.





Regenerative Agriculture

What is regenerative agriculture, and how is it relevant to organic?

WRITTEN BY Ellen Vessels

Thanks to the tireless work of farmers and advocates over the past few decades, the word “organic” has transformed from a loose buzzword into a codified standard.

The integrity of the USDA Organic seal is the backbone of the organic industry that consumers trust to provide healthy, pesticide-free food grown using practices that prioritize protecting the environment and communities.

As in the early days of organic, “regenerative agriculture” is used as a catchall phrase meaning different things to different people. We can look to the USDA for a unified definition of “organic,” but the precise meaning of “regenerative agriculture” is still in flux. Yet despite the lack of an authoritative definition, Whole Foods named regenerative agriculture as the number one food trend for 2020, several educational institutions have created regenerative agriculture programs, and legislators are using the phrase to advance policy. So what is regenerative agriculture, and how is it relevant to organic?

It’s hard to pin down exactly what regenerative agriculture is and isn’t, because farmers, advocates, and agronomists have not come to a consensus. As a matter of fact, some would prefer to keep the definition somewhat fluid. Design consultants Terra Genesis International have proposed seven principles of regenerative agriculture, yet have also asked the public to contribute their personal definitions for the phrase. They insist that “a single definition would put a wall around our agriculture landscapes,” and believe that each bioregion will have to define regenerative agriculture in a way that is “unique to their place, history, and whole living ecosystem.”

CCOF-certified rancher Sallie Calhoun of Paicines Ranch uses techniques in her rangelands and vineyards that are considered regenerative. Yet she says it’s “too early” to “codify regenerative agriculture ... because it is evolving so quickly.” Some see an advantage to keeping the definition of regenerative open-ended, so that it can be modified for each region or operation and can adapt to unforeseen future challenges.

One challenge that we know is on the horizon is the increasingly destructive impact of climate change. Advocates of regenerative agriculture prioritize responding to large-scale problems, particularly climate change and food insecurity. Major goals include sequestration of atmospheric carbon, rebuilding topsoil to guarantee productivity for future generations, and improving natural resources and habitats.



Maintaining and improving soil health is required for organic certification, and organic farmers helped establish many of the practices promoted within regenerative agriculture, such as using cover crops, diverse crop rotations, rotational grazing, and compost to improve soil health. In other cases, regenerative agriculture calls for practices that some organic farmers use, but which aren't required for organic certification, such as reduced tillage.

Without an official definition, "regenerative" is a general adjective describing these holistic, soil-building practices. In some cases, the term promotes ecologically conscious practices amongst farmers who are not necessarily certified organic. For example, in 2017, The Carbon Underground and CSU Chico brought together hundreds of businesses, nonprofits, and scientists, to create a "unified definition" of regenerative agriculture. The Carbon Underground says that while they consider organic to be the "gold standard" for agriculture, they feel that, because of the pressing threat of climate change, there is a "need to encourage and enable as many farmers and ranchers as possible to work in a regenerative way, even if they currently choose not go through organic certification." Similarly, General Mills created a self-assessment tool for farmers to recognize their regenerative practices and identify areas for improvement. This tool is meant to be "inclusive of all farming systems—small and large, organic and conventional."

And while the Carbon Underground and General Mills also uplift organic, unfortunately sometimes "regenerative agriculture" doesn't preclude practices proven to be detrimental to ecosystems and communities, such as the use of synthetic pesticides.

This is one reason that some advocates are eager to pin down a specific definition. While it's not the end-all and be-all of regenerative agriculture, at this time the Regenerative Organic Alliance (ROA) has drafted the most fully fleshed out set of standards. The ROA is a coalition of businesses, farmers, and nonprofits, including the Rodale Institute, who recently completed a one-year pilot program for Regenerative Organic Certification (ROC). ROC sets benchmarks within three pillars additional pillars added to organic certification: soil health,

animal welfare, and social justice. In all three areas, ROC seeks to hold a standard far above the bare minimum, and to encourage a "commitment to best practices and continual improvement."

ROA Executive Director Elizabeth Whitlow says that establishing this certification was a way to put a "stake in the ground" that would keep broad use of the term from becoming an opportunity for greenwashing.

So while the details of regenerative agriculture may differ depending on who you ask, more and more stakeholders are working together to solidify a definition. CCOF's certification arm is currently evaluating whether to offer ROC inspections to clients. It remains to be seen whether ROC will gain broad-based support from the agricultural community and consumers. Sallie Calhoun, for example, uses the word "regenerative" to describe her practices, but isn't sure she'll seek a Regenerative Organic Certification. She is concerned that creating a certification could "reduce the speed of innovation" and wants to make sure that any certification has clear metrics for measuring outcomes such as soil health.

Similarly, Darryl Wong, an agricultural researcher at the University of California, Santa Cruz, supports the soil-building practices of regenerative agriculture, but is hesitant to use the term until he has an opportunity to closely evaluate the motivations and criteria of the certification.

The debate over regenerative agriculture is not without controversy, and at times advocates of organic and regenerative starkly disagree with one another. Some advocates of regenerative agriculture feel that organic doesn't go far enough in addressing climate change and regenerating natural resources. Despite hesitating to commit to a regenerative organic certification, Calhoun considers regenerative agriculture a "paradigm shift" that expands beyond organic. While acknowledging that the creation of a National Organic Program was an important landmark, Jeff Moyer, executive director of The Rodale Institute, says that there are limitations to what the USDA can enforce. He says that the federal government already has their "hands

Maintaining and improving soil health is required for organic certification, and organic farmers helped establish many of the practices promoted within regenerative agriculture.

full” with current organic regulations, and that by forging a partnership between governmental agencies, nonprofits, and businesses, Regenerative Organic Certification gives innovators an alternative pathway for adapting quickly to oncoming challenges.

On the other hand, organic farmers are wary of the broad, unregulated use of the term “regenerative agriculture” that in some cases allows for synthetic pesticides, or can be used as a meaningless marketing term without an established standard and system of enforcement and accountability.

Soil Health: Tillage and Pesticides

If there's one thing that unifies all of the divergent definitions of regenerative agriculture, it's an obsession with soil health. Regenerative agriculture seeks to reverse the trend of topsoil depletion that threatens to destabilize food security. While organic farmers are intimately familiar with most of the soil-building practices promoted by regenerative agriculture, there is one practice that is less widely adopted by organic growers: reduced tillage.

Darryl Wong, who studies reduced tillage, explains that tillage exposes soil microbes to air and light, which helps them convert soil organic matter (SOM) into nutrients—for a short period of time. However, repeated, deep tillage can disrupt fungal and microbial communities and damage soil structure, leading to more erosion and loss of soil carbon. He compares conventional tillage to burning a hot, fast fire in your woodstove—you'll heat the room, but wake up shivering in the middle of the night after quickly burning through all of your fuel.

Reduced tillage, according to Wong, is like stacking your stove with hardwood logs and damping it down to keep the fire burning low and slow all night. With reduced tillage, soil structure improves, microbial activity and soil organic matter increase, and roots grow more easily, making nutrients steadily available to crops for the long haul. Water infiltration in the soil increases, reducing runoff, erosion, and irrigation inputs. All of these benefits are amplified when combined with organic soil-building practices.

Reduced tillage is already widely used by conventional cash crop growers in the Midwest, whose fast-growing corn, grain, and soy crops quickly outcompete weeds. But whereas organic farmers often use tillage for weed control, these conventional farmers are permitted to use herbicides and genetically modified seeds, such as RoundUp-Ready corn.

This is perhaps the most vehement point of contention amongst organic growers who are otherwise already using techniques that could be called regenerative. Pesticides are known to degrade soil health and to pollute waterways; they are toxic

to bees and other pollinators, and cause health problems in farmworkers and children in agricultural communities. Furthermore, building up SOM only to damage or destroy microbial life in the soil with pesticides is contradictory to the goal of regenerating topsoil health.

According to research by the Rodale Institute, minimizing tillage improves soil structure and increases soil carbon. However, researchers also found that reduced- or no-till systems only reduced total greenhouse gas emissions when practiced within organic systems. On conventional farms, carbon sequestration benefits of reduced tillage were counteracted by the nitrous oxide emissions from nitrogen fertilizers, resulting in net-positive greenhouse gas emissions. Thus, the Rodale Institute promotes reduced tillage, but with the caveat that the benefits are only apparent when combined with other organic soil-building practices and when pesticides are eliminated.

Jeff Moyer thinks that for agriculture to be considered truly regenerative, synthetic pesticides should be prohibited. He compares the willy-nilly use of the term regenerative to a person claiming they want to be a professional athlete, but refusing to give up smoking. “You can say you're regenerative but that doesn't make it true. There are a lot of people trying to capitalize on that,” he says.

For organic growers with orchards, vineyards, or perennials, reducing tillage may be a fairly straightforward. But for organic annual vegetable and specialty crop growers, reduced tillage presents a challenge when it comes to managing weeds.

More innovation may be required to make reduced tillage easier for organic vegetable growers. For example, some farmers are taking inspiration from reduced- and no-till cash crop farmers in the Midwest, but retrofitting their machinery for smaller vegetable rows. Wong predicts that California farmers will also need to breed locally adapted cover crops that grow quickly enough to suppress weeds but don't suck up more than their fair share of water.

According to Wong, the soil carbon benefits of reducing tillage also remain to be seen. He says that while initial research shows an increase in soil carbon with reduced tillage, deeper measurements reveal that carbon accumulates near the surface of the soil but with less carbon below. Says Wong, there's a “debate over how much, if any” soil carbon benefits can be expected from reducing tillage.

More research and innovation are needed to determine the benefits and feasibility of reducing tillage in organic systems, and organic farmers operating on thin margins may not be able to take the financial risk to experiment. Nonetheless, some forward-thinking innovators are interested in adding reduced



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tillage to the organic soil-building practices they are already using. Farmers like Phil Foster of CCOF-certified Pinnacle Farms are leading the charge. By using organic techniques, Foster saw an increase in soil organic matter over the course of a decade. However, in the mid-2000s, those numbers plateaued. That's when Foster began looking for more techniques to continue improving soil health.

Foster is experimenting with reducing tillage by making fewer passes with tillage machinery, in some cases even planting a cover crop directly after a harvest without tilling at all. He is also using specially fabricated machinery to till more shallowly, and uses a "strip tiller" to till a gap just wide enough to plant seeds.

Foster has seen some immediate benefits, including, on some fields, a decrease in fertilizer inputs, an increase in earthworm activity, and an improvement in soil tilth and water-holding capacity. Unfortunately, while some high-fertility fields have maintained steady yields, in other cases yields have decreased. He is still troubleshooting to find the optimal rotation of cover crops, and to manage crop residue without tilling it deeply into the soil.

Despite the challenges, Foster says that he is "still encouraged," and that while it may take several years before he can measure the long-term benefits of reduced tillage, he is "intrigued" and "interested in moving forward."

All in all, regenerative agriculture is still contested terrain. There are divergent definitions, and even disagreement as to the pros and cons of specifying a definition at all. While the majority of regenerative practices overlap with organic techniques, there are controversies around synthetic pesticide usage and whether or not reduced tillage is feasible for organic vegetable farmers.

However, many farmers and organizations reject the "either/or" dichotomy between organic and regenerative. They want to keep building on the important legacy of organic and the well-established consumer confidence in the USDA organic seal, while seeking out additional routes for moving agriculture forward. More and more, we see the terms combined into "regenerative organic." Says Whitlow, "we believe you can't have regenerative without organic." Likewise, the Rodale Institute embraces the phrase "regenerative organic," and the ROA requires USDA organic certification as a baseline for Regenerative Organic Certification. Moyer says that there's no need to reinvent the wheel when it comes to organic; instead, ROC builds on the "very high standard" that organic has already set, while supplementing that standard with some additional requirements.

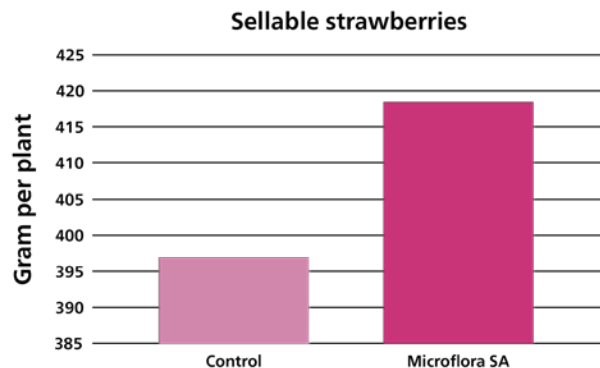
Regenerative and organic are both working to continually improve agriculture, to grow food for generations to come, and even to solve some of our most critical environmental and economic challenges. Organic farmers have long been at the forefront of this movement, and Wong applauds the well-established organic farmers who are adapting, experimenting, and "setting the stage of the next revolution."

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organic ADVOCACY



CCOF Finds Support for Organic Among State Legislators

On February 19, over 60 CCOF members, staff, and supporters gathered in Sacramento to make the case that organic is a solution to climate change, economic insecurity, and public health inequities. During 55 meetings with legislators and staff, organic farmers, ranchers, and processors shared their firsthand experiences of building healthy soils that nourish crops during drought, of growing their businesses and investing in their local communities, of protecting the environment, and of producing food that feeds the world. Attendees left the state Capitol inspired by the meetings and ready to continue advocating. While COVID-19 has impacted our membership and our policy work, the relationships we built at this event will serve as a strong foundation on which we can advance organic policy.

Perhaps the most important outcome of our Advocacy Day was the education provided to policymakers on the intricacies of organic. Despite the continued growth of organic in California, many legislators and staff admitted they knew little about organic food and agriculture. CCOF members were ready and willing to explain the details of certification, soil health strategies, organic pest management, and the economics of their businesses. It was also an opportunity for some members to meet with their elected officials in person. While legislators are happy to meet with groups like CCOF, they are always looking for more opportunities to speak directly with their constituents.

Some policymakers sought feedback on their legislation, seeing CCOF and organic farmers as experts in areas such as pesticide safety and climate and agriculture. One legislator remarked that organic farmers are well positioned to help bridge the state's urban-rural divide. He said that urban residents are concerned about the environmental impact of agriculture, but are uninformed about the social, environmental, and economic importance of agriculture to rural communities. Organic agriculture can bring prosperity to rural economies while providing valuable ecosystem services. Overall, the meetings took a tone of information exchange, with promises to keep in touch about these issues moving forward.

Advocacy Day meetings were enhanced by representation from partner organizations such as the California Climate and Agriculture Network, Community Alliance with Family Farmers, and Ceres Community Project. Conscious Kitchen, a nonprofit organization that runs an organic school food program, brought along a teacher whose students have benefited from the program. The support of these advocates demonstrated to legislators that the organic community extends beyond agriculture.

Legislative Asks

The CCOF policy team prepared a diverse list of asks for advocates to present to their legislators. From support for organic food in school meal programs, to an increased state budget for agricultural technical assistance through UC Cooperative Extension, to hearings investigating the true cost of food, our asks reflect the vision of the *Roadmap to an Organic California*. The *Roadmap* is a first-of-its-kind research project that investigates how organic is a solution to today's

We are working to amplify our collective voice as an organic community and to keep us connected despite the need for social distance.

toughest challenges. It is the blueprint to grow organic to combat climate change, build economic security, and foster health equity.

CCOF is pushing to expand organic acreage and food access while ensuring the success of organic farms, ranches, and businesses. Encouraging more organic food in schools will open up opportunities for organic growers while also ensuring children from all socioeconomic backgrounds have access to healthy food. Investing in research and technical assistance will help growers improve their agronomic practices and bottom line. Delving into the true cost of food will shed light on how different types of farming impact consumers and the state's economy.

Our meetings with legislators reinforced important relationships in Sacramento that will help elevate the concerns of our members and the organic community going forward.

Lessons from COVID-19

COVID-19 and the resulting shelter-in-place orders struck just weeks after Advocacy Day, disrupting many of our members' businesses and lives. School, restaurant, and food service closures left many farms without a market. The scarcity of personal protective equipment has further exacerbated the challenge of maintaining an essential business during the shutdown. Disrupted supply chains have made it difficult to ensure that harvested crops make it to our kitchen tables.

COVID-19 also disrupted the state legislature, which rapidly shifted its focus to respond to the pandemic. The state's obligation to pass a balanced budget means that ambitious funding priorities may be squeezed out. At press time, the governor was negotiating a "lights on" budget, which focuses on California's most pressing funding needs in areas such as health care.

What does this mean for CCOF's legislative priorities? The answer to this question likely reflects one's approach to food and agriculture generally. Some may dismiss organic school food as too expensive in the face of an economic crisis. Yet the rapid efforts at public schools to organize food distribution for students and families demonstrate how essential school lunch programs are for food security, and the nutritional benefit of organic foods is critical during a time when health is at the forefront. Dramatic economic shifts caused by COVID-19 have created a need for resource sharing and technical assistance among farmers, who are tasked with navigating complex federal relief programs. Investment in UC Cooperative Extension would mean more support for farmers and their businesses.

The economic and health crisis we are experiencing will test our priorities as a state and as a nation. CCOF is committed to advancing policies that recognize the power of organic to build resilient and prosperous communities, and the groundwork set by our Advocacy Day puts us in a great position to do so.

Digital Advocacy Work

With many people working from home, digital communication is more important than ever. Beginning in March, as shelter-in-place orders took effect across the country, the CCOF policy team responded by creating a Crisis Resilience Resources webpage at www.ccof.org/crisis-resilience, sending out action alert emails to allow our community to weigh in on federal relief programs, and promoting digital resources such as webinars. These tools are designed to help members navigate a complex new landscape of health and safety regulations, government assistance, changing market trends, and critical state and federal policies.

While the policy team works to ensure CCOF members are up-to-date with critical information for their businesses, our success as advocates is also dependent on gathering information from members. Agriculture advocates, nonprofit organizations, policymakers, and consumers rely on CCOF for information about organic farmers. Our role is to gather information about the reality for producers on the ground and to share that reality with those in a position to respond. CCOF's chapter leaders have helped us take full advantage of the chapter system by using the COVID-19 survey and ongoing virtual chapter meetings to gather valuable information about our members. We use this information to keep partner organizations and policymakers up-to-date with the needs of organic businesses.

In addition to communicating directly, we utilize our social media and the CCOF newsletter to publish in-depth content, such as our "We Are Essential" blog series, which features CCOF member Jamie Collins of Serendipity Farms as a frequent guest author. This series highlights how the organic community is essential during COVID-19. All of this works serves to keep everyone informed, to amplify our collective voice as an organic community, and to keep us connected despite the need for social distance.

To keep up-to-date with policy updates, make sure to subscribe to the CCOF newsletter at www.ccof.org/subscribe.

To reach out to the policy team to ask for support or share your needs, email us at policy@ccof.org.

Organic Agriculture—The Recycling Bin for Nitrogen

Nitrogen is part of the foundation for all life. But too much of a certain form of nitrogen—reactive nitrogen—can threaten both people and ecosystems and cause a cascade of environmental problems. A new study led by researchers at the University of Virginia and co-authored by The Organic Center shows that organic farming practices can help prevent the global accumulation of reactive nitrogen, and scale back the presence of one of the major contributors to climate change.

Published in April in the scientific journal *Environmental Research Letters*, the research confirms that the biggest difference between organic and conventional farming is that organic farming helps reduce the buildup of reactive nitrogen by using recycled nitrogen sources like compost and other natural soil amendments. Across all food groups, organic production releases around 50 percent less new reactive nitrogen to the environment.

While most climate change media coverage focuses on carbon emissions, nitrogen is an often overlooked but critical part of the equation.

Nitrous oxide (N_2O) is a potent greenhouse gas, with over 300 times the global warming potential of carbon dioxide. Agriculture is the largest human source of N_2O , contributing over two-thirds of N_2O emissions. Synthetic fertilizer application on conventional crops (especially corn and soybeans) is one of the leading sources of N_2O emissions in agriculture, and also leads to nitrate leaching into groundwater. Nitrogen pollution contributes to smog, acid rain, forest dieback, coastal “dead zones,” biodiversity loss, and stratospheric ozone depletion.

The Organic Center has developed and posted a companion report on its website titled “How organic can help curb nitrogen pollution: the most overlooked cause of climate change...and most other environmental disasters” that succinctly describes the findings and puts them into perspective with other research.

Organic Helps Keep Nitrogen Out of the Global Pool

Most nitrogen does not contribute to air or water pollution. But when that nitrogen goes through a process called “fixing,” it becomes reactive. Reactive nitrogen is what’s used for plant and animal growth, but it also can cause a host of environmental problems. More and more of the benign nitrogen on Earth is getting transformed into the reactive form, primarily through the creation of synthetic fertilizer.

Organic agriculture does not use synthetic fertilizer. Instead, all the nitrogen on organic farms comes from recycled sources like compost, or in small amounts from nitrogen-fixing bacteria in the roots of cover crops or other legumes. Those same sources also build a complex and rich soil able to hold onto nitrogen longer rather than just allowing it to run off the field.

The results of this study show that not only is organic adding significantly less to the global pool of reactive nitrogen, it can also help put nitrogen waste that could otherwise contribute to nitrogen pollution back into food production. By using manure and food waste as fertilizer, organic helps keep nitrogen losses from other farm systems from entering the environment.

The study also points to the need for further research to improve our understanding of how organic agriculture could help reduce nitrogen loss to the environment.

Organic and Soil Health: The Big Picture

Multiple studies have shown that organically managed soils are better at supporting soil health than conventionally managed soils. For example, organic soils have greater biological activity, greater soil stability, more biomass, and higher diversity than conventionally managed soils.

These soil health benefits also provide advantages when it comes to nitrogen pollution. Organic soils have the potential to store more nitrogen rather than losing it to leaching and runoff. The higher organic matter content allows the healthy soil to hold more positively charged molecules of mineral nutrients such as nitrogen. This can reduce nitrogen pollution by keeping reactive nitrogen in the soils, where it can be used by crops, instead of losing it to the environment.

The bottom line is this: organic agriculture can help farmers maintain steady yields in the face of extreme weather events associated with climate change.

The Organic Center is an independent nonprofit 501(c)(3) research and education organization operating under the administrative auspices of the Organic Trade Association. Visit www.organic-center.org.

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Update on CCOF Inspections During the COVID-19 Pandemic

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Organic and food safety certifications are essential services as part of the critical infrastructure of agriculture. Inspections are an important part of the certification process, and we are continually evaluating how we can safely conduct them under pandemic restrictions.

The USDA National Organic Program has indicated that **certifiers may not issue new certifications without on-site inspections**. Therefore, CCOF is prioritizing inspections for new certifications where an inspection is required to harvest or begin production. We are also performing some renewal inspections when the circumstances allow. All certified operations should remain inspection-ready and maintain required records and a current Organic System Plan.

While shelter-in-place orders persist, CCOF will conduct hybrid inspections, which include both remote and on-site components. The on-site portion of hybrid inspections will be as efficient as possible, with social distancing measures in place, and will focus on observing parcels, livestock, equipment, and facilities. For indoor facilities, brief, well-planned visits with protective measures are necessary. Much of the hybrid inspection will occur remotely by phone, email, and suitable internet communication platforms to enable interviews and document reviews.

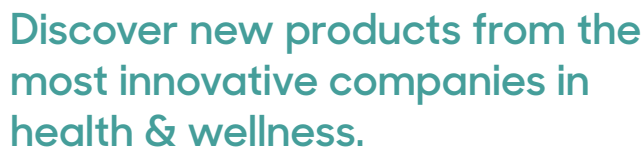
Your inspector will arrange a pre-inspection meeting to develop and agree upon an inspection plan that is suitable for your operation and communication capabilities. Together, you will determine what software and device platforms are available and best suited to the scope and structure of your records and documents. Ideally, you will share a platform with webcam capabilities for “face-to-face” communication and a screen sharing option for reviewing electronic documents together in real time. Inspectors and producers will need to be flexible to work with whatever virtual tools are available. In some cases, telephone and email may have to suffice. Whenever CCOF is unable to verify essential compliance points during any inspection, a follow-up inspection may be required.

Typically, hybrid inspections will require several separate scheduled components, including a preliminary meeting to create an inspection plan, a main meeting, an on-site inspection, and a final review.

CCOF has implemented COVID-19 inspection protocols to minimize on-site time and maximize safe social distancing practices when both the inspector and client agree to proceed with an on-site inspection. Inspectors and clients have the right to decline partaking in on-site inspections in order to comply with local orders.

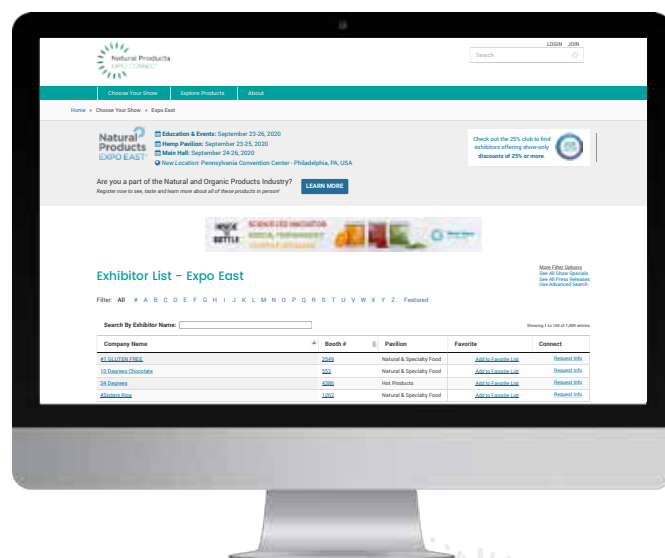
On-site inspections may only occur under the following conditions:

- Both the client and the inspector are healthy (no flu-like symptoms) and willing.
- Social distancing precautions are in place. Both the inspector and the client must follow safety guidelines from the Centers for Disease Control (CDC) (or their equivalents in Mexico and Canada) and any additional local or regional guidelines.



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We thank you for your cooperation and flexibility as we work together to continue producing organic food and upholding high standards of integrity in organic certification.

Please contact inspectionoperations@ccof.org if you have any questions.

John Trinterud Retires from Inspecting

CCOF thanks and congratulates John Trinterud for his 19 years as an outstanding organic inspector and mentor. Trinterud, who currently lives with his wife Colene in Walnut Creek, recently announced that he is retiring to spend more time with his family and on other creative pursuits, such as gourmet bread baking.

When Trinterud started inspecting he was an organic farmer in Mendocino County. Trinterud has a curiosity and passion for everything culinary, and thus enjoyed meeting the wide variety of food innovators on the inspection trail. Trinterud's contribution to training new inspectors and staff deserves special mention. The majority of current Northern California handler inspectors had the good fortune of having Trinterud as their mentor. He has also been a favorite for CCOF handler staff to shadow on inspections, providing vital training experiences.

Trinterud's inspection work is always at the top tier of integrity and quality. We send him off with best wishes, knowing that his contributions will be missed and appreciated for years to come!

Food Safety Update

Today, more than ever, we want assurances that the food we eat is safe. In many ways, the world is stepping into the daily realm of a food safety professional. Cross contamination, sanitation of food contact surfaces, a healthy workforce, and proper hygiene are all considerations when working to minimize microbial contamination of our food supply. Organic farms and facilities maintain elaborate food safety plans to prevent contamination of the products they produce. No doubt about it—food safety is something organic producers take seriously.

The coronavirus pandemic has changed everything we know, and nothing is untouched. But despite disruptions in the daily operations of most businesses, retailers of organic products are still requiring valid food safety certificates from the producers that supply their shelves. This can get complicated because food safety certification requires a visual inspection of the harvest, packing, and processing of an operation *while it is in process*. As mentioned in the Certification News in this issue, CCOF has implemented COVID-19 inspection protocols to minimize on-site time and maximize safe social distancing practices when both the inspector and client agree to proceed with inspections.

CCOF GLOBALG.A.P. Certificate Extensions

We understand how important it is to maintain your food safety certification. CCOF is taking proactive steps to avoid disruptions in your food safety certification so you can stay focused on producing the best organic food possible. CCOF GLOBALG.A.P. certificates can now be extended for six months when we must postpone the on-site inspection due to circumstances beyond our control. We have been automatically extending certificates for producers two months before the certificate expires. This will hopefully give producers and CCOF more time to schedule and conduct on-site inspections.

Relaxing Time Constraints Around the Certification Process

During this pandemic, GLOBALG.A.P. has relaxed rules around the timing of the certification process. For example, CCOF may extend the time allowed for the producer to present corrective actions identified during an inspection by an additional 28 days (56 days in total) for justified reasons based on circumstances beyond the control of the producer.

CCOF can also extend the amount of time between the in-person portion of the inspection and the document review, which is often done via email and telephone interviews.

The bottom line is that agriculture and food production are essential and always have been. We understand the important work you are doing and are here to support your operation as we work through these unprecedented times. We're all in this together! Please email us at foodsafety@ccof.org if you have questions.



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