GOLD RIDGE
RESOURCE CONSERVATION DISTRICT

September 11th, 2018

Office of Environmental Farming and Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

Dear OEFI Staff,

Thank you for the opportunity to comment on the draft Request for Grant Applications. The Gold Ridge RCD has been an applicant and assisted growers/ranchers in applieng to the Healthy Soils Program as well as a recipient of contracts. The Gold Ridge RCD has also opted to not apply several times due the cumbersome requirements that don't meet the needs of our growers or region. We are appreciative of this funding opportunity and hope that our comments serve to improve opportunities for the great work intended by this program.

**2018 Health Soils Program Demonstration Projects comments**

- The concept behind the "Type A" Projects needs to be reconsidered. There are entities, such as universities, that are set up to conduct this level of research and soil testing. While continued research on soil health and the benefits of various practices is necessary, this grant program is not an appropriate avenue for doing so. Very little funding currently exists to help producers implement practices that reduce GHGs and sequester carbon; these precious funds shouldn't be diverted to force recipients to conduct research that can be redundant and nonstandardized, especially when they don't have the equipment or training to do so. The practices funded by the program, such as compost application and woody plant establishment, have been scientifically proven to sequester carbon – we feel it is redundant to request this be re-verified at each individual site. Practices can instead be verified though monitoring that practices are installed or completed as proposed, with their carbon benefits calculated using models.

- This same reasoning applies to the requirement to have Treatment and Control fields for each practice. We are implementing already established practices and feel that we should implement good practices as broadly as possible. Effectiveness monitoring could be conducted programmatically by qualified third parties using standardized methods, potentially through collaborations with universities.

- The maximum grant award for "Type B" projects needs to be raised. Many of the accepted practices involved woody plant establishment, which can be expensive in a Mediterrean climate where plants require dry season irrigation and maintenance including browse protections and weeding for years after installation.

- The Compost Application White Paper referenced in the draft RGA serves as the guidance for allowable compost application rates on rangeland, specifying the recommended rates as 4.0 – 5.3 dry tons/acre, well below the rates established by the Marin Carbon Project (MCP) in our

area, but requiring this very low quantity be applied each year for three years. The cost (and carbon emissions) of this application strategy seem needless – it would make more sense to allow a one-time higher rate in accordance with the MCP's proven protocol.

- Please reconsider the outreach requirements currently mandated by the program. Resource Conservation Districts, and other partner organization that work directly with ag producers, regularly conduct outreach and networking to promote and expand our programs through a variety of methods and channels, and have been doing so for decades. Given our significant experience, we ask that you please consider allowing us to describe to you how we intend to promote these programs. While we do conduct workshops on certain topics to target certain audiences, it has not proven the most effective strategy to network with conventional farmers in our area. The new generation of early adopters, such as small-scale organic niche producers and market garden homesteaders, do attend workshops, and often even host them themselves; however, they don't tend to need convincing to implement carbon beneficial practices, as they are generally already doing them. Our efforts need to focus instead on spreading these practices to more skeptical conventional producers. While practices like compost applications may be effective to meet program goals, they don't provide much to look at, particularly right after implementation. Drawing 120 ranchers or farmers to a demonstration site would mean asking them to take time away from ranching and farming to travel great distances to simply look at a field. As it is, ranchers and farmers have other events they regularly attend, like trade shows, California Rangeland Coalition conferences, Farm Bureau events, etc – we regularly conduct outreach at those events, showcasing our projects in presentations. In our years of experience it is one-on-one relationships we build or foster between neighbors that have the most impact to farmers trying and changing practices. Also, due to the low number of ranchers in our area, having 120 attend workshops would mean drawing them from across the state, which is costly, time consuming and has a large carbon footprint. Locally, 30 attendees at an event series is a large and successful turnout.

Sincerely,

Brittany Jensen

Brittany Jensen,
Executive Director

**September 2018**

**Re: CDFA Healthy Soils Program – Draft RGA Comments**

The Monterey Bay Regional Climate Action Compact (Compact) is a network comprised of local jurisdictions, non-profits organizations, academic institutions, and private businesses from throughout the 21 jurisdictions within Monterey, Santa Cruz, and San Benito counties. The Compact works to support our region in taking actions to address the causes and impacts of climate change on a local level through regional collaboration, project implementation and best practice replication.

The Compact would like to express gratitude to the CDFA and Healthy Soils Program for taking comments from previous comment periods into account and for making changes to minimize potential barriers to participation for future proposals and funded projects.

We commend CDFA for adopting the following changes, among others, including:

- Removal of the 3rd year cost-sharing requirement*
- Extension of the application from 6 weeks to eight weeks**
- Addition of 12 new practices to the program**

**This prior requirement was identified by many of the entities within our stakeholder network as a significant prior barrier to participation. Removal of this requirement is a positive step to increasing access and participation in these programs.*
***Please see additional comments below.*

The Compact is actively working to support local projects that achieve the objectives of the CDFA and Healthy Soils Program, with a particular eye on the potential for this program to provide important carbon sequestration and additional waste management and agricultural co-benefits for ranchers and farmers within our region. We respectfully request your consideration of the following comments.

**Comment #1: Add rangelands as an eligible agricultural operation.** The Incentives Program RGA specifies under "Eligibility", that projects must be located on a California agricultural operation and defines such an operation as "row, vineyard, field and tree crops, commercial nurseries, nursery stock production, and livestock and livestock product operations. The Demonstration Projects RGA dictates under "Eligibility" that a project must include at least one farm. We are requesting that rangelands be included as an appropriate project site for these programs as several of the approved practices have been successfully implemented and may be best suited to rangelands, resulting in increased carbon

sequestration among the many additional co-benefits. Rangelands cover ¼ of the worlds land surface and make up the dominant cover type in California. California has approximately 62,960,129 acres[1], making up ½ of California's coverage[2]. Expanding the project sites to include rangelands could allow a broader pool of potential applicants to move forward with projects that otherwise cannot move forward and could increase the possibility of expending the remainder of the programs funds. Additionally, there are not adequate resources in place to properly manage rangelands to utilize them as carbon sinks. Inclusion of rangeland management with the intention of sequestering carbon also has a suite of additional co-benefits including decreased flood and erosion risk.

**Comment #2**: **Allow for expansion of existing and ongoing practices to be eligible for funding.** Both the Incentives and Demonstration Programs exclude fields or APNs with existing and ongoing implementation of any agricultural management practices listed under Eligible Agricultural Management Practices from applying. Many of the ranchers/ranchers with the most potential, interest, readiness, and suitability for applying these practices to meet the intended carbon sequestration and other goals of the HSP would be excluded under this requirement. By denying the opportunity to apply to APNs with existing and ongoing practice implementation limits the ability to expand the success of carbon sequestration practices and limits the amount of outreach and possibility for project replication. This acts as a major barrier to many potential applicants. To expand the applicant pool and increase project replicability, we recommend that these participants be eligible.

**Comment #3: Reduce the outreach goal for the number of individual farmer/ranchers trained and/or expand the types of attendees that can be counted.** The outreach requirement for the Demonstration Projects dictates that a minimum of 120 different individuals comprised of farmers and/or ranchers must attend the demonstration project site over the course of the three-year project period. Population may be an obstacle in achieving this requirement. Furthermore, due to the nature of the daily requirements of farmers and ranchers, it may not be feasible to assume that 120 different individual farmer/ranchers will be able to participate in outreach events, prevents continued education, interest cultivation and necessary trust building for participants over time, and it further ignores the additional integral educational need to engage other local agency, organization and land-use professionals important to building the long-term technical capacity for successful farmer/rancher implementation in the future. Some rural communities may be further disadvantaged by this target – for example, a small county such as San Benito with a total population of 60,310 is significantly more challenged to secure this level of participation as compared to San Diego with a population of 3.3 million. In an effort to allow all communities the opportunity to participate and meet these requirements, we request that the number of individuals required to participate be decreased to a more attainable value.

**Comment #4: Provide for more frequent Incentives Program reimbursement.** The Incentives Program is currently structured to reimburse participants through yearly invoicing upon practice verification. Many potential applicants may not have the means, especially in disadvantaged communities, to wait a full year for reimbursement. We ask that you consider a quarterly or biannual reimbursement structure as a more frequent reimbursement model may encourage the target population, farmers and ranchers, who otherwise may be unable to consider participation, to apply to this program.

[1] http://rangelandarchive.ucdavis.edu/Online_Learning_Resources/_file196534_/
[2] https://nicholasinstitute.duke.edu/sites/default/files/ni_ggmoca_r_4.pdf

**Comment #5: Expand the definition of Control field.** In the Demonstration Projects RGA outlines the differences between a Treatment and a Control field and defines a Control field as a field which includes the current management practices being implemented on the project site as to provide a comparison to the Treatment field. We request that the definition of Control field be expanded to include sites that may not be undergoing any management practices, i.e. sites that have previously been degraded and would otherwise experience further degradation or remain neutral in its existing degraded state.

**Comment #6: Expand the timeline for submission to account for seasonality of funding release and adequate time for technical assistance workshops prior to submission.** While we recognize that this draft RGA provides an additional timeline compared to the prior cycle, it should be noted that this timeline was functionally reduced due to timing of technical assistance grants to RCDs/organizations to provide workshops on the requirements of the grants, eligible costs, forms and other details of the solicitations requirements. Under the prior cycle, these workshops were delayed in many cases such that many did not occur until the last 2-3 weeks before proposals were due. It is also worth noting that the updated timeline now falls between November- January, which may pose increased challenges for respondents working to prepare applications, site visits and appropriate site documentation over the holiday season as well as for providing applicants with adequate timing for technical assistance from RCDs, NRCS and other service professionals. It seems reasonable to expect that at least 2 weeks of the application period will be lost due to holidays. We recommend further extending the timeline 2-4 weeks. We also recommend that all technical assistance training be completed prior to the beginning of the application period to ensure providers are fully equipped to assist applicants with requirements of these programs.

**Comment #7: Increase the practice reimbursement rates to compensate for actual cost of implementation. Increase maximum grant total limits.** Although reimbursement rates per acre of practice were higher than NRCS, the rates still may not cover the actual cost of the installation/ application of these practices - for some of these practices the proposed reimbursement is significantly less than the total cost of implementation. Placing limits on the reimbursement of eligible practices limits potential participation and may even actively discourage farmers/ranchers for being willing to implement practices in the future as interested parties may interpret the costs of implementation to outweigh potential benefits. For instance, application of compost including compost procurement, transport to farms and spreading ranged from $250-$1000/acre for implementation in the Monterey Bay Area (depending on farm location) although the reimbursement continues to be limited to just $35/acre. This incentive is not a big enough benefit to the farmer to encourage participation. The reimbursement also does not account for potential lost revenue due to time out of rotation, increased labor or removal from production. Under the prior cycle, these requirement further raised concerns about what additional costs would be allowable, creating overall ambiguity as to what could be included in the overall proposal for reimbursement even beyond specific practice application. It is recommended that these limitations be removed entirely and applicants be allowed to propose the best use of funding to achieve the goals of their project. It should also be noted that total funding limits may be too low especially for cooperative or regional project applications that might otherwise be positioned to achieve economies of scale by combined multiple practices or application areas under a single joint proposal. Maximum grant limits, especially for demonstration projects should be increased.

**Comment #8: Consider a less restrictive overall approach that leverages local expertise for future funding releases, such as Block grants to RCDs or similar organizations.** Local Resource Conservation Districts (RCDs) and similar organizations are well suited and indeed designed to support goals aligned with the HSP. These entities are in regular contact providing outreach, education and technical assistance to the ranchers and farmers within each of their service territories. These organizations are best equipped to understand the needs, barriers and limitations preventing farmers/rancher's from taking action to implement desired carbon sequestration practices that this RGA is designed to address and to properly complement concurrent local programs/actions already underway. While several key improvements have been incorporated into this new cycle of HSP funding, solicitations could be improved by further reducing restrictions and leveraging the significant embedded expertise and ongoing relationships being driven by entities like RCDs, farmer/rancher associations, non-profits and other organizations daily embedded in these efforts. Consider adjusting some or all funding to be awarded directly to RCDs, for instance as a block grant, in which the RCDs have discretion over the funding to increase adoption of carbon sequestering practices within their region. These entities are best positioned to know where and how to best utilize the funding to incentivize the specific opportunities within their area in a way that supports concurrent efforts.

Thank you for your consideration of our comments.

Sincerely,

Brennen Jensen
Director, Emerging Ecologies
Co-Chair, Monterey Bay Regional Climate Action Compact

**From:** Chris Howard
**To:** CDFA OEFI@CDFA
**Cc:** christian@ecodairyfarms.com
**Subject:** CDFA Healthy Soils Program
**Date:** Wednesday, September 12, 2018 3:59:26 PM

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Alexandre Dairy received a Healthy Soils Grant Program award for 2018-2020. The largest amount of the award was for compost application. We learned on a recent site visit by CDFA that utilization of the Dairy's own compost was prohibited. We also learned we would have to purchase the compost. From our review of the application it was not only confusing but unreasonable to even suggest a dairy that creates compost from manures daily to go out and purchase said supplies completely unreasonable. We would have never applied for the funds if this was the case. It is too cost prohibitive. The Dairy then also learned compost must be certified? Why? This makes no sense. How do you incentive folks to adopt practices when you first make them purchase, second make them jump through an unnecessary certification and then make it costly prohibitive to even afford the expense to apply send compost. I think in the future, if the State through CDFA where to consider offering this program, make it worth the incentive. The grant is also too small to be effective and it was to time consuming for the little amount received, both from a reporting and application standpoint.

Chris Howard
707-218-7872

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| **From:** | Mike Dougherty |
| **To:** | CDFA OEFI@CDFA |
| **Subject:** | Inclusion of Class A EQ biosolids in the Healthy Soils program |
| **Date:** | Wednesday, August 01, 2018 4:51:29 PM |

We would like to request that the application of Class A EQ biosolids to agriculture land as a fertilizer and/or soil amendment be considered a practice that is eligible for funding within the Healthy Soils Program. The addition of organic matter and carbon through the application of biosolids has been documented to have positive and long term benefits on soil carbon sequestration, improvement of soil microbial activity and reductions in the use of commercial fertilizers (which is associated with a smaller carbon footprint attributed to reduced transportation and production of the fertilizer products). Similarly to compost the encouragement and incentivization of biosolids use will reduce the disposal of this material to landfills (which has a negative GHG effect), reduce commercial fertilizer usage and increase the use of this carbon rich material on farmland.

Respectfully,

Mike Dougherty, M.Sc, CCA 4R NMS, P.Ag.
Director, Product Management

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| **From:** | kikibo22 |
| **To:** | CDFA OEFI@CDFA |
| **Cc:** | Iesha Siler |
| **Subject:** | additional consideration to 2018 HSP draft |
| **Date:** | Wednesday, September 12, 2018 11:25:53 AM |

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Hello,

**I am very happy with the direction** shown in the grant-funding incentive program for healthier soils. Seems like the result of a lot of energies and efforts, and I hope for the best!

However, **please remember the virtually automatically-ignored extraction of fossil fuels**, and its normalized use in farming operations... or, ?is that a different section/grant than this "healthy soils" program? In either case, **I suggest that if you think with the mindset of "low/lower-external-inputs" for farming operations**, then it would be a simpler indicator of healthy soils, there wouldn't be a need to do soil testing as prescribed in the draft, and there would be a lot of other healthiers too - like "social health", planet health, personal health...

Thank you for doing the best you can,

Keshav Boddula
714.255.9564 (house)

WPHA
Western Plant Health Association

September 10, 2018

Dr. Amrith Gunasekara
Office of Environmental Farming and Innovation (OEFI)
California Department of Food & Agriculture (CDFA)
1220 N. St.
Sacramento, CA 95814
Cdfa.oefi@cdfa.ca.gov

Re: Request for Inclusion of Slow Release/High Efficiency Fertilizer and Nitrification Inhibitors in 2018 Healthy Soils Grant Program

Dear Dr. Gunasekara:

On behalf of the Western Plant Health Association (WPHA), I am submitting these comments in support of continuing to include slow release/high efficiency fertilizers and nitrification inhibitors as qualifying Best Management Practices (BMP) as part of the Healthy Soils Program's grant program for farmers to develop environmentally sustainable farms. WPHA is submitting these comments at this time, as the only published comment deadline we could identify on the Healthy Soils Program Demonstration Projects website is September 12, 2018. WPHA represents the interest of fertilizer manufacturers, crop protection manufacturers, agricultural retailers, and agricultural biotechnology providers in California, Arizona, and Hawaii.

It is our understanding that the inclusion of all approved Natural Resources Conservation Service's (NRCS) "Conservation Practice Standards (CPS)" was made at the request of groups who felt that CDFA should not be selecting appropriate BMP's for this program. Groups stated that CDFA should defer to the NRCS approved list so all recognized CPS could be utilized by farmers, thereby improving opportunities to participate in this program by having more "tools in the toolkit". Yet after CDFA acquiesced to this request, certain groups then requested that CDFA not recognize all the CPS's, but seemingly only organic practices.

CDFA is now considering a proposal which would eliminate slow release fertilizer and nitrification inhibitors that are recognized under NRCS's CPS 590. Slow release fertilizers have been utilized by farmers for over two decades in California. There is an extensive body of research, including research sponsored by CDFA's Fertilizer Research & Education Program to demonstrate the benefits of slow release fertilizers. They provide environmental benefits to allow more efficient uptake of nutrients, which prevents both leaching to groundwater and volatilization which could contribute to N2O emissions and climate change.

Nitrification Inhibitors provide similar benefits to farmers. Nitrification inhibitors prevent nitrate fertilizers from leaching to groundwater and can help prevent volatilization. There is established research supporting this, including multiple research projects underway or completed by California State University Fresno, on multiple California crops. Nitrification inhibitors are an exciting new development for farmers to meet California's mandates to mitigate nitrate leaching, as well as nitrogen contributions to the atmosphere.

Todays farmers face growing requirements from multiple California regulatory agencies to reduce potential contributions to water and air pollution. All farmers are being mandated to participate, and while small farmers may be allowed to be phased in, they will have to participate in the future. As a result of these mandates, farmers need to have as many tools to demonstrate their compliance to State regulations as are available. Eliminating these CPS's from the program not only unnecessarily eliminates farmers from improving their practices through this grant program while remaining economically sustainable, but potentially increases their difficulty in meeting California Water and Air Board requirements.

We note that there is discussion that these practices should only be included if the research was conducted on a "statewide" basis. We believe this is a false narrative. While California may be unique because of the many different soils within the state, our soils are not unique to other soils around the world. Research should be included that provides for "California-like" soils. Farmers who utilize specific practices are going to match those practices to their soil geology as well as their cropping system, so we believe it is inappropriate for CDFA to create artificial obstacles to their inclusion.

WPHA is submitting the following citations for slow release/high efficiency fertilizers and nitrification inhibitors. We believe they demonstrate the breath of research already undertaken on these BMPs, the value to farmers and the environment of both of the NRCS CPS 590 practices in question, and identify published research that overall accounts for all soil types in California.

Again, we request that for slow release/high efficiency fertilizers and nitrification inhibitors continue to be included in the Healthy Soils Grant Program. The Healthy Soils Program, as well as the Office of Environmental Farming and Innovation should apply equally to all farmers who wish to participate, and not just to one sector of the farming community. To eliminate farmers who choose to utilize some conventional practices is inappropriate to the goals of this program. We thank you for your consideration of our comments. Please feel free to call on me if you have any questions.

Sincerely,

Renee Pinel
President/CEO

Attachments

4460 Duckhorn Drive, Suite A, Sacramento, CA 95834 * Phone: 916.574.9744 * Fax: 916.574.9484 * **www.healthyplants.org**

**Citations evidencing potential benefits of enhanced-efficiency fertilizers**


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Office of Environmental Farming and Innovation
California Department of Food and Agriculture
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8-28-18

**Re: Healthy Soils Program Draft Request for Grant Application (RGA)**

Dear OEFI Staff,

Thank you for the opportunity to comment on this draft RGA. On behalf of the undersigned 25 organizations, we respectfully request your consideration of our recommendations below.

Our comments reflect our shared vision of a program that maximizes impact, provides producers with a positive experience, and further elevates CDFA's role as an innovative and effective agency.

We want to first commend and thank OEFI staff for proposing some significant improvements to the program guidelines, application, and application process. These improvements include:

1. Removing the 3rd year cost-sharing requirement
2. Extending the application period from six weeks to eight weeks

3. Planning for a November through January application period – a more convenient time for most producers
4. Adding 12 new practices to the program
5. Improving the user-friendliness of the budget spreadsheet

These proposed changes address a number of concerns raised by stakeholders in 2017 and will increase producer interest and participation in the program. Thanks again to OEFI staff for their responsiveness.

There are still a number of ways the program must be improved in order to achieve its full potential and improve the likelihood of full subscription of its significantly increased funding. Based on our review of the RGA and the feedback many of our organizations have gathered from producers, we offer the recommendations attached. Thank you for the opportunity to provide input.

Sincerely,

Brian Shobe
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California Climate & Agriculture Network

Rex Dufour
Western Regional Office Director
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Brittany Jensen
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Mendocino County Resource Conservation District

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# Summary of Recommendations for the Healthy Soils Program
**(in order of priority)**

- ☐ 1. Allow previously awarded APNs to be eligible for new practices within the APN
- ☐ 2. Remove or revise unnecessary short essay questions (Incentives)
- ☐ 3. Drop Demonstration Type A Projects; focus program on maximizing practice adoption
- ☐ 4. Make it easier to get advanced payments to minimize cashflow challenges
- ☐ 5. Replace 120-farmer participation requirement with SMART goals (Demonstration)
- ☐ 6. Clarify the role of soil testing and have qualified third parties do it (Incentives)
- ☐ 7. Change the date implementation must start by in order to allow spring practices
- ☐ 8. Implement third party verification (Incentives)
- ☐ 9. Institute a 2-step application process with a short pre-proposal (Demonstration)
- ☐ 10. Provide a scoring rubric for the evaluation criteria
- ☐ 11. Add an SDFR checkbox to the application to ensure Farmer Equity Act compliance

We offer additional recommendations to ease farmer participation in the program at the end.

# Recommendations for Draft Healthy Soils Program RGAs
**(in order of priority)**

**1. Allow previously awarded APNs to be eligible for new practices within the APN**
Stacking Healthy Soils practices has synergistic benefits, so the program should encourage producers to do so. If producers want to adopt 1-2 new practices at a time over multiple rounds in order to make their transition to a suite of Healthy Soils practices manageable, the program should accommodate that. CDFA can effectively prevent double-dipping for the same practice while still allowing producers to adopt new practices on a previously funded APN.

**2. Remove or revise unnecessary short essay questions (Incentives)**
The length and complexity of the application in the first-round intimidated farmers and prevented many from applying or completing their applications. The application's four short essay questions are particularly confusing and time-consuming to farmers, in part because it is unclear if and how they relate to the evaluation criteria, and in part because the word limit

indirectly pressures them to write responses that are 1-2 pages in length. These questions are unnecessary to meet ARB's or Proposition 68's requirements for GGRF programs and give an unfair advantage to producers who can afford outside consultants or administrative staff to complete their applications, or who have strong English language and writing skills. Removing or revising them will also significantly reduce the workload for application reviewers.

We strongly recommend *removing* the following questions:

*"Explain why this project is important to the agricultural operation."* (page 26, section II, question 1)
This appears to bear no relationship to evaluation criteria. If CDFA wants quotes about the importance of the program, that would be best accomplished by asking award recipients.

*"Describe how you plan to assess and measure possible changes and impacts after project implementation." (page 26, section II, question 3)*
This also appears to bear no relationship to evaluation criteria. This question forces applicants to guess what CDFA is looking for and propose assessment and measurement plans that may be both unnecessary and scientifically inappropriate. Program evaluation should not be the responsibility of the producer.

*"Describe environmental benefits achieved through implementing the proposed project in the short (within three years) and long term (beyond three years). Describe how the proposed project will improve soil health. Provide a qualitative description of the environmental co-benefits of the proposed project such as water and air quality improvements, and ecosystem services." (page 27, section IV)*
The current literature on these practices can provide this information. Practices' co-benefits can simply be added up in the review stage to determine a score for "Soil Health and Environmental Co-benefits."

We strongly recommend *revising* the following question to have multiple checkbox answers (instead of an essay) that directly relate to a scoring rubric for the evaluation criteria:

*"Describe how the project will be sustained beyond the project term. Include anticipated learning or successes from the implemented management practices and how this will affect future adoption (e.g. continuing the practice(s) in the long-term (>3 years) and/or adding the practice(s) to new fields)." (page 26, section II, question 2)*
Checkbox examples:

- ☐ If successful, I am interested in expanding healthy soils to more acres on my farm
- ☐ I am interested in applying for additional healthy soils practices in the future
- ☐ I would be willing to host other farmers to learn about my experience

**3. Drop Demonstration Type A Projects; focus program on maximizing practice adoption (Demonstration)**

As a community of farmers, researchers, TA providers, and advocates, we greatly value and actively advocate for increased funding for research on climate-smart agricultural practices through a variety of policies, agencies, and programs. However, we continue to oppose the use of HSP funding for research purposes because: 1) the program will not fund the kind of long-term research that is needed to address the most pressing research questions and advance important climate change models; and 2) demonstration projects were included in the legislation establishing the Heathy Soils program to encourage producer outreach, farmer-to-farmer education, and real-life demonstration, the combination of which is often considered the most effective way to convince producers to adopt new practices. The demonstration projects were never intended for research. As a reminder, the statute establishing the Healthy Soils Program says nothing about research: "On-farm demonstration projects means projects that incorporate farm management practices that result in greenhouse gas benefits across all farming types with the intent to establish or promote healthy soils."[1]

As such, we strongly oppose the proposal to use demonstration projects to research the proposed practices that CDFA has determined do not have sufficient peer-reviewed research to incorporate into the Incentives or Demonstration Type B projects.

**4. Make it easier to get advanced payments to minimize cashflow challenges**

Most farmers face a cashflow challenge every spring and early summer as they pay for months of inputs and labor but have no harvest to earn revenue from. As such, paying tens of thousands of dollars upfront to implement a practice and then waiting 6-12 weeks for reimbursement can put a serious financial strain on farmers during lean times of the year. Whereas the previous RGA said grant recipients would be eligible to receive up to 25 percent of the total grant award in an advanced payment, this draft RGA has removed that line. Please reinstate it and make it easier for farmers to receive the advanced payment, as we heard from a number of recipients that it was difficult to obtain in the first round.

**5. Replace 120-farmer participation requirement with SMART goals (Demonstration)**

The Demonstration Project requirement that 120 unique farmers or ranchers visit the demonstration site during the 3-year project period is impractical for some agricultural regions. A number of farmers and TA providers told us that in their rural regions, where farmers have to travel long distances to attend events, having a dozen or more farmers attend their events is considered a success. Thus, they considered the 120-farmer attendance requirement unrealistic and decided not to apply, despite having strong candidates for demonstration sites.

**6. Clarify the role of soil testing and have qualified third parties do it (Incentives)**

This spring, we heard from staff that CDFA is requiring farmers to conduct three years of soil testing for the explicit purpose of confirming that soil organic matter is increasing and carbon is being captured. We were told by staff that if the soil tests do not demonstrate significant

[1] FAC Div. 1, Ch.3, Article 8.5, Section 569

increases in soil carbon, that could lead to some practices becoming ineligible in the program. We have attached our letter from earlier this year that details our concerns about this approach to and use of soil testing.

The soil testing requirement is not necessary for the program to be "science-based" (it is already science-based), nor does the requirement conform with scientific expectations about the high intensity of sampling required to demonstrate soil organic matter accumulation in such a short period. Such testing should not be expected to provide more accurate or reliable data than the scientific literature used to inform the program's development and quantification methodology.

Thus, soil testing should not be viewed as verification of the efficacy of the practices. CDFA should end the requirement for producers to conduct annual soil testing and instead clarify the role of soil testing in the program and contract with third parties with relevant expertise (e.g. Cooperative Extension, RCDs, etc.) to conduct soil testing from a sub-set of projects over time.

**7. Change the date implementation must start by in order to allow spring practices**
The draft RGA states that implementation must begin no later than November 30, 2019, while the project year is listed as July, 2019 to June 30, 2020. We do not understand the rationale for requiring project implementation to begin 6 months before the project year ends. This will likely prevent farmers from applying compost during the late winter and early spring, when it is most strategic for them to do so. If program funds must be liquidated before June 30, 2020, couldn't CDFA instead require reimbursement forms for the first year of implementation to be submitted by March 30, giving CDFA 90 full days to process and issue reimbursements?

**8. Implement third party verification (Incentives)**
Beyond just ensuring appropriate implementation of projects, farm visits for project verification are an opportunity to troubleshoot practice implementation challenges, share notes about what other farmers in the area are doing, and build a relationship. All of those actions are best done by local TA providers – RCDs, Extension, etc. - who know the area's crops, climate, and producers and have a long-term interest in building producer relationships. Plus, local TA providers have more flexibility to verify practices when producers need to implement them. For example, in a wet year, there are limited and unpredictable windows for compost application. We recommend CDFA reconsider their verification approach for the HSP incentives projects in recognition of the logistical challenges it would bring upon CDFA program staff and producers, as well as the value of fostering relationships between local TA providers and producers.

**9. Institute a 2-step application process with a short pre-proposal (Demonstration)**
This is standard for other agencies (e.g. WCB and DOC) implementing large and complex grants. A two-step application with a pre-proposal facilitates better communication between the administering agency and applicants, resulting in more successful applications. This process also reduces the upfront burden on the applicants.

**10. Provide a scoring rubric for the evaluation criteria**
For example, the category of "Project Feasibility" in the Incentives RGA is worth up to 40 out of 100 points in the application, but applicants are not given any indication about how reviewers will determine "feasibility." Providing guiding questions or scoring rubrics is a common and best practice for competitive grant programs – one which we hope CDFA will adopt in its final RGA.

**11. Add an SDFR checkbox to the application to ensure Farmer Equity Act compliance**
Adding a socially disadvantaged farmer/rancher (as defined in Section 512 of the Food and Agricultural Code) checkbox to the application will allow CDFA to assess their program participation, which is necessary to meet the requirements of the Farmer Equity Act.

## Additional Recommendations to Ease Farmer Participation in the Healthy Soils Program

**Allow real-time responses to questions submitted during the application period**
We consistently heard feedback during and after the first application period that waiting for days (sometimes over a week) for responses to questions through CDFA's Q&A "rounds" system significantly delayed applicants' progress towards completing their application. The first round of the Healthy Soils program had an unusually high incomplete-to-complete application ratio, resulting in an undersubscribed program. Improving the response time to applicants' questions – while maintaining fairness and transparency – is one important way to reduce barriers to successful application submission.

**Ensure the new platform allows applicants to share applications with TA providers**
To facilitate application assistance, please ensure the new application platform allows applicants to conveniently share their application with TA providers.

**Provide a multilingual outreach toolkit (e.g. flyer, FAQ, and sample application)**
The absence of promotional materials and sample applications (in English, Spanish, or other languages spoken by California farmers) in the first round of the program forced individual TA providers to either create their own or go without, which was an inefficient use of resources and especially limited outreach and TA to farmers with limited English proficiency. We recommend creating a toolkit of multilingual, promotional and application assistance materials for the program, including a flyer/brochure, FAQ, and sample application. By having CDFA prepare these materials and translate them into the multiple languages spoken by California farmers, CDFA can ensure accuracy while maximizing outreach efficacy and efficiency.

*Note - Older letter included as attachment to the letter dated August 28, 2018*


Carbon Cycle Institute


Karen Ross, Secretary
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

May 25, 2018

**Re: Healthy Soil Program Implementation Concerns, Request for Changes**

Dear Secretary Ross,

Thank you for your time on this important issue. We are writing to provide a number of specific recommendations that we believe will improve farmer interest in and overall implementation of the Healthy Soils Program. We have identified key concerns that have prevented widespread subscription to the program at a scale matching the demand that we see on the ground. Other concerns relate to how the program will demonstrate its own success.

While we have had concerns about the program for some time, and have expressed these to CDFA over the life of the program, recent meetings have demonstrated that many of our concerns remain and there is no clear and transparent process in place to address them. These issues have implications for the long-term viability of the Healthy Soils Program.

We believe this program can grow and be successful. To achieve this, program accessibility and practicality, as well as how the relevant science is understood and applied, need to be improved. What follow are our specific concerns and recommendations moving forward.

## 1. Application: Onerous and burdensome

We remain concerned that the application for Healthy Soils Incentives and Demonstration projects is burdensome and overly complex. We have discussed these issues with CDFA in the past. Based on our experiences with other GGRF programs (e.g. WCB's adaptation program, DOC's SALCP), we request the following.

**Recommendations:**

- For demonstration projects, require a short pre-proposal that will allow CDFA to discuss project readiness with applicants. This is standard for WCB and DOC and allows for improved communication and facilitates successful applications.
- Follow the Food and Ag Code definition of Demonstration projects and drop the research components of the projects. FAC Div. 1, Ch.3, Article 8.5, Section 569: *"On-farm demonstration projects" means projects that incorporate farm management practices that*

*result in greenhouse gas benefits across all farming types with the intent to establish or promote healthy soils"*

- Develop a check-box application for the Healthy Soils Incentives program, similar to CA NRCS' EQIP program application. Drop all essay and narrative questions.
- Publish a selection criteria for how all applications will be scored.

**2. <u>Public Process: Role of EFA SAP, Public comment</u>**

CDFA staff appears to misunderstand the statutory requirements for input from the Environmental Farming Act Science Advisory Panel on Healthy Soils program guidelines. During our recent meeting with CDFA staff, when asked when the SAP would be given an opportunity to review and comment on updated Healthy Soils Program guidelines, staff responded that SAP does not need to review the guidelines or weigh in on administrative aspects of the program because their role is simply to advise on the science of the practices.

This is in direct contradiction to the statutory mandate of SAP; FAC Div. 1, Ch.3, Article 8.5, Section 569 (3) states: "*The panel shall also advise the department on scientific findings, [Healthy Soils Program] framework, guidelines, grower incentives, and providing technical assistance."*

CDFA's misunderstanding of the SAP's role overlooks the opportunity to leverage panel members' experience and expertise administering or utilizing on-farm conservation programs. While the Department has ultimate decision-making authority over the program, the panel should be acknowledged and engaged for its expertise and critical role in the development of the program.

This lack of clear public process is currently impacting the program. CDFA has not indicated whether or not public comment will be solicited on the most recent list of new practices CDFA is considering for the Healthy Soils Program, despite hearing from several EFA SAP members at the May meeting that they would like public comment to be received before the next SAP meeting. We would like to see a process similar to that offered by ARB or the Department of Conservation, which includes a draft to be reviewed, a minimum of a 30-day public comment period, and a final SAP meeting where the revised draft, based on public comment, is finalized. CDFA has inconsistently asked the SAP members to vote on issues before it. We would like the SAP to vote on the final program guidelines and related changes to the program, including new practices, understanding the SAP's role remains advisory.

For the third round of Healthy Soils Program guidelines, we request the following timeline for 2018:

- July or August meeting of SAP: Draft Healthy Soils Program Guidelines presented by CDFA staff and included in the ten-day notice of the meeting
- August or September: Deadline for public comment on the guidelines (no less than 30-day public comment period)
- September or October meeting of the SAP: The revised program guidelines are discussed and finalized.

**Recommendations:**

- The EFA SAP must be consulted on new, draft program guidelines. Additionally, a well-advertised public process must be developed for Healthy Soils program development, including a minimum of a 30-day public comment period. We request the timeline above be adopted for the next round of program guideline development.
- We ask that CDFA provide a public comment period on the new practices proposal, with comments due in advance of the July meeting of the EFA SAP. All comments should be made available to the SAP members.

**3. <u>Soil testing: Inappropriate expectations</u>**

In our recent meeting, we heard from staff that CDFA is requiring farmers to conduct three years of soil testing for every Healthy Soils incentive project to confirm that soil organic matter is increasing and carbon is being captured. We were told by staff that if the soil tests do not demonstrate significant increases in soil carbon, that could lead to some practices becoming ineligible for future incentives funds. This is a self-imposed expectation by CDFA that is problematic on several fronts, including:

1. Incentive projects are not controlled experiments: Farming practices are not sufficiently controlled over the project period to attribute changes in soil organic matter to HSP practice adoption, nor should they be.
2. The signal-to-noise problem: Research has already demonstrated that all of these practices will result in accumulation of soil organic matter and sequestered carbon. This may occur slowly (in some cases over decades) and variably over the applied acreage. Given the inherent variability of individual farm and ranch land soils, the amount of sampling necessary to capture a statistically significant increase in organic matter after three years (let alone annually) is an unreasonable expectation.
3. Finally, the expectation that projects demonstrate soil organic matter accumulation was described by CDFA staff as the justification for requiring three consecutive applications of a practice on the same field over a 3-year project period. This is despite the fact that in some cases a 1-year application (e.g. rangeland compost) or every-other-year application (e.g. vineyard mulch and compost) is considered the best management (or most practical) practice.

The soil testing requirement is not necessary for the program to be "science-based" (the program is already science-based, which is why it received funding and approval from Air CA Resources Board), nor does this requirement conform with scientific expectations around sampling to demonstrate soil organic matter accumulation. Such testing should not be expected to provide better data than can be found in the rigorous literature review that was used to inform the development of the program and the ARB's quantification methodology for the program.

**Recommendations:**

- Soil testing should not be viewed as verification of the efficacy of the practices. CDFA should end the requirement for farmers to conduct annual soil testing. Rather, CDFA should contract with a third party with relevant soil testing expertise (e.g. Cooperative Extension,

RCDs, etc.) to conduct soil testing from a percentage of the projects over time and clarify the role of soil testing in the program.
- The program should allow for one-year application rates for rangeland compost, as supported by the best available science, and every-other-year application of compost and mulch for vineyards, as supported by widely accepted practice.

**4. <u>New Practices: Inconsistent Use of Science</u>**

There is a lack of transparency on the scientific basis for certain Healthy Soils practice guidelines, particularly with respect to compost applications. In 2017, CDFA published a white paper and convened a subcommittee to develop incentivized compost application rates. Despite significant objections to the white paper's recommended application rates from members of the scientific community, farmers, CalRecycle and policy advocates, CDFA did not address these concerns. Rather, the compost rates, which impact the agronomic effectiveness of the practice and its sequestration potential, remained unchanged.

Prior to the first round of Healthy Soils Program funding, CDFA staff expressed a willingness to revisit compost application rates in subsequent funding rounds. However, at our recent meeting with CDFA staff, we were told the issue of compost rates is closed and were offered no future process for re-evaluating the rates. This is despite a recommendation in CDFA's white paper that compost application rates be reconsidered following an opportunity for more scientific review. The Department has also occasionally referenced concerns regarding compost by other agencies (CalRecycle, SWRCB), but has never cited specific regulations, or written or verbal statements from those agencies that would allow for a detailed discussion or response.

We also have concerns about the lack of transparency in the inclusion of slow release fertilizers. CDFA has failed to offer any scientific justification (e.g. literature review, examples of studies) that demonstrates the efficacy of slow release fertilizer use in California and its ability to reduce greenhouse gas emissions and increase carbon sequestration.

**Recommendations:**

- CDFA should publish criteria for how the department will determine the inclusion or exclusion of practices in the Healthy Soils program. Prior to completing those criteria CDFA should provide a draft set of criteria to the EFA SAP to review and comment on. Public stakeholders should also have an opportunity to comment.
- Compost rates and the related white paper must be opened up for public discussion and revision.
- Slow release fertilizers should not be allowed into the program without justification, including a literature review on the efficacy of the practice in California.

We represent an important constituency of the Healthy Soils Program. We are the leading advocates for legislative funding and represent farmers who are exceptionally invested in the greenhouse gas emission reductions and soil health benefits of the Program. We hope to see this program be tremendously successful and greatly expand in size.

As we continue to advocate for renewed and expanded program funding in the current budget process, we need both improved program implementation and a more transparent public process moving forward.

We appreciate the opportunity to make you aware of our concerns and hope to be able to discuss them further with you.

Sincerely,

Jeanne Merrill, Brian Shobe
California Climate & Agriculture Network

Torri Estrada, Jeff Creque
Carbon Cycle Institute

David Runsten
Community Alliance with Family Farmers

John Wick
Owner, Nicasio Native Grass Ranch

# Carbon Cycle Institute

September 10, 2018

Secretary Karen Ross
California Department of Food Agriculture
1220 N Street
Sacramento, CA 95814

Re: Healthy Soils Program – Comments to Draft Request for Grant Application

On behalf of the **Carbon Cycle Institute (CCI)**, we are writing to offer comments and suggestions to the Draft Request for Grant Applications for the Healthy Soils Program (HSP). The HSP will increasingly play a central role in the State meeting its goals under AB32 and climate adaptation policy. We deeply appreciate CDFA and its staff for their work to shape and refine the HSP. We look forward to working with CDFA to strengthen the Program.

The Carbon Cycle Institute's mission is to stop and reverse climate change by advancing science-verified solutions that remove atmospheric carbon dioxide while promoting environmental stewardship, social equity and economic sustainability. To that end, we support and develop projects that promote climate-beneficial management practices on working lands throughout California, work to build the technical capacity of land managers and producers to plan and implement impactful projects that reduce GHGs and sequester carbon in the lands base and are engaged in gathering scientific data on the important role these practices can play in sequestering carbon from the atmosphere.

**1. Demonstration Type A Projects: funding data collection on individual sites does not constitute research; focus program on maximizing practice adoption.**

Research is identified as a priority established by the Healthy Soils Initiative Action Plan: *Action 3 – Provide for research, education and technical support* https://www.cdfa.ca.gov/healthysoils/ and has been supported by several members of the EFA panel at public meetings. The program's first round of funding for Type A projects requires data collection by the project proponents. However, the activities currently funded and/or required by the Healthy Soils Program cannot be considered research.

Although data collection on the different demo sites may provide valuable information, the interpretation and applicability of the results will be limited to the specific sites where the practices are being implemented. In addition, poorly constructed and inconsistent methodologies and data collection could lead to conflicting and erroneous findings. The fact that the data will be collected by different individuals using different methodologies and analyzed by different labs, could be a source of significant variability, including statistical error. We are deeply concerned that the data collected will not provide the information need to evaluate practices and refine and improve quantification methodologies (ie COMET-Planner, compost-planner) used by the Program.

245 Kentucky Street, Suite A, Petaluma, CA 94952
testrada@carboncycle.org

The soil health benefits of the conservation practices included in the Healthy Soils Program are supported by a strong body of peer-reviewed scientific studies. In addition, CDFA and ARB, working with Colorado State University and others, have adopted an effective and scientifically-valid quantification platform for agriculture, in terms of measurement of soil carbon and GHG impacts. In layering additional quantification, analysis and reporting requirements onto program participants, CDFA is undermining the success of its own program.

CCI supports investments in applied research programs and activities needed to ensure implementation of the most efficient ways to build and maintain soil carbon at both the farm and the field level while meeting the agronomic needs of growers and ensuring protection of environmental resources. CCI is also supportive of funding for continued research to expand the knowledge base on innovative conservation practices to inform the HSP program and future incentive programs.

We recommend that CDFA creates a separately funded program to address research gaps previously identified by producers, practitioners and the scientific community. This would free demonstration project funding for use for its intended purpose. Identified gaps can be used to develop specific hypotheses and appropriate experimental design and statistical tools that will allow scientifically valid testing of those hypotheses. Research may need to be long-term and at multiple scales since carbon accumulation in soils and vegetation through implementation of conservation practices may take years or even decades to be measurable.

The central goals of the Demonstration Projects program are; to showcase conservation management practices that mitigate GHGs and increase soil health, and to create a platform promoting widespread adoption of conservation management practices throughout the state. The statute establishing the Healthy Soils Program does not mention research: "On-farm demonstration projects means projects that incorporate farm management practices that result in greenhouse gas benefits across all farming types with the intent to establish or promote healthy soils."[1] We strongly oppose the use of demonstration projects to "research" the efficacy of practices that CDFA has determined do not have sufficient scientific support to be included into the Incentives or Demonstration Type B projects.

Sincerely,

Torri Estrada, Executive Director and Policy Director
Jeffrey Creque, Ph.D., Director of Rangeland and Agroecosystem Management
Pelayo Alvarez, Ph.D., Director of Outreach and Partnerships

[1] FAC Div. 1, Ch.3, Article 8.5, Section 569

CCOF
Organic Certification Education & Outreach Political Advocacy Promotion

Office of Environmental Farming and Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

Re: Healthy Soils Program Draft Request for Grant Applications

Dear Healthy Soils Staff,

Thank you for this opportunity to comment on the draft Request for Grant Applications for the Healthy Soils Incentives Program.

CCOF appreciates the work that CDFA has invested into making the Healthy Soils Incentives Program an effective vehicle to fulfill its objective: providing financial incentives to California growers and ranchers to implement agricultural management practices that sequester carbon, reduce atmospheric GHGs, and improve soil health.

CCOF is a member of the California Climate & Agriculture Network and has joined with them and other coalition members to help CDFA shape the Healthy Soils program to realize its potential. We appreciate the improvement we've seen over time and have a few more suggestions to offer.

Thank you for considering the following comments.

Sincerely,

Jane Sooby

Senior Policy Specialist

Cc: Kelly Damewood, Director of Policy & Government Affairs

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## The RGA Correctly Includes Conservation Crop Rotation as an Eligible Practice and Should Also List On-Farm Produced Compost as an Eligible Practice

CCOF submitted comments in February and December 2017 encouraging CDFA to add Conservation Crop Rotation to the list of eligible Healthy Soils practices. Thank you for including it as an eligible soil management practice in the draft Request for Grant Applications (RGA).

CCOF's past comments also urged CDFA to add application of on-farm produced compost as an eligible practice, and we reiterate our support for that practice. It is currently listed in the draft RGA as a proposed practice.

Compost made on-farm is an important input for many organic farmers. On-farm composting transforms crop wastes into a source of nutrients for subsequent crops. Compost helps build soil organic matter, which improves soil structure and water and nutrient retention. Using farm-based inputs also reduces emissions associated with transporting compost from manufacturing facility to farm. Because compost application to annual crops and to perennials, orchards, and vineyards are eligible practices, it is common sense to approve on-farm produced compost as part of this practice.

## Short-Term Soil Testing Should Not Be Used to Determine Effectiveness of Eligible Practices

CDFA should not use the current reporting requirement—soil test results showing soil organic matter for each of three years—to determine whether or not the practice is effective in building soil organic matter. Each practice has already been verified by NRCS to improve soil quality as shown in the references cited for each practice standard. Also, many factors including soil structure, amendment type, rainfall, temperature, and crop type in addition to management practice can influence rate of soil organic matter formation. As the draft RGA notes on page 18, "benefits from implementation of practices are expected to be achieved in the long term."

Finally, as noted in the next section of our comment, soil organic matter test results submitted by grant recipients may not be comparable with each other due to varying approaches to sampling and the type of soil test conducted and may not provide a fair assessment of a practice's effectiveness in building soil organic matter.

CCOF supports routine soil testing as a key tool for farmers to plan their fertility management practices each season; however, using short-term testing to determine whether a practice is effective in building soil organic matter is not appropriate. We are concerned that CDFA might establish an arbitrary, short-term target value for soil organic carbon to which few practices would measure up and we urge CDFA not to go down this path.

## Replace Project Reporting Requirements with A Meaningful Report Template

The draft RGA proposes that only one item be reported by grant recipients: soil organic matter from samples taken prior to project implementation, one year after implementation, and two years after implementation.

There are two main reasons we suggest stepping back from soil organic matter content being the sole reporting requirement:

1. The soil sampling method as presented in Appendix II Document 5 is not straightforward. The Soil Sampling Protocol for Soil Organic Matter Analysis instructs a grower to "Decide whether one sample will adequately represent the field (or APN), or whether an APN should be split into multiple sampling units." Producers unfamiliar with soil sampling procedures may not know how best to divide a field into appropriate sampling units, leading to inaccurate results.
2. The draft RFA contains links to state-recommended laboratories for Healthy Soils testing. While most labs offer an "organic matter" or "OM" test, some of them use other terms including "total organic carbon," "humic matter," and "Solvita $CO_2$ respiration." Because of this variation in commercially available soil tests, there may be large variation between the results simply because they are measuring different things.

Additionally, reducing the reporting requirement to only soil test results misses the opportunity for grant recipients to share their experience using innovative Healthy Soils practices with the larger farming community.

CDFA instead should require grant recipients to submit a brief report at the end of the project and make these reports publicly available on the Healthy Soils Program website. It is standard for a grantmaking program to require that recipients submit a final report summarizing the project.

Here is a suggested template for a Healthy Soils Incentives Program final report:

1. Describe the Healthy Soils practice(s) that you implemented. Provide details on timing and management of the practice(s).
2. Describe any challenges that arose in implementing the practice(s).
3. What did you notice about the impact of the practice(s) on your crops and soil quality?
4. Will you continue implementing this practice? Why or why not?
5. Provide soil test results from test fields if available.

If CDFA determines that it would like to collect the soil carbon data for reference, we suggest that CDFA either

1. provide grant recipients adequate resources to hire a crop consultant to take samples using a standard protocol and offer guidance on the specific lab analysis required; or
2. assume responsibility for taking the soil tests to ensure consistency in sampling and testing.

September 10, 2018

Office of Environmental Farming and Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

**RE: Healthy Soils Program and State Water Efficiency and Enhancement Program Draft Requests for Grant Application (RGAs)**

Dear OEFI,

Thank you for the opportunity to provide comments on the draft RGAs for both the Healthy Soils Program and State Water Efficiency and Enhancement Program**.** On behalf of the California Farmer Justice Collaborative and our member organizations and individual farmers, including Agriculture & Land-Based Training Association, California FarmLink, Community Alliance for Agroecology, Farms to Grow, Kitchen Table Advisors, Mandela Partners, National Hmong American Farmers and PAN North America, we respectfully ask that **the Farmer Equity Act of 2017 (Section 510 of the Food and Agricultural Code) be applied to these two programs**.

The California Farmer Justice Collaborative's (CFJC) mission is to ensure that farmers of color are empowered to directly participate and effectively lead in building a fair food and farming system in California. We unite farmers, advocates, and other allies to challenge historic and ongoing racism, and other forms of structural oppression, in order to create the comprehensive change needed to build such a system.

Last year, the California Legislature passed, and Governor Jerry Brown signed, The Farmer Equity Act (AB 1348, Aguiar-Curry), FAC 510 et seq, noting among other findings that "farmers of color have historically not had equitable access to land and other resources necessary to conduct farming in California, and that legacy of prejudice persists." This Act **requires** CDFA and coordinating agencies to better include socially disadvantaged farmers and ranchers in their policies and programs--and HSP and SWEEP are no exception.

California has the largest population of Asian-American farmers and ranks third in the nation of Hispanic farmers. Demographic trends in California agriculture –both the aging white farmer population, and the growing proportion of farmers of color in the state – change the dynamics of who needs resource support and how it should be provided. Socially disadvantaged farmers make up approximately 21% of farmers in the state, according to the last agriculture census. For all of these reasons, socially disadvantaged farmers and ranchers must be included within CDFA's Climate Smart Ag initiatives. The inclusion of these farmers and ranchers can be addressed as follows:

**Healthy Soils Program**

**Add Socially Disadvantaged Farmers and Ranchers to the Evaluation Criteria with a Score of 10 points.** As of October 2017 with the passage of the Farmer Equity Act, CDFA is required to ensure socially disadvantaged farmers and ranchers have better access to resources they provide to farmers in the state. Equity means giving those that have been historically left behind opportunities to step onto a level playing field. CDFA needs to include socially disadvantaged farmers and ranchers as part of their Evaluation Criteria with a score of 10 points (a few points can be pulled from each category to keep a sum of 100 points). As defined in FAC 512 et seq, socially disadvantaged farmers or ranchers include all of the following:
(1) African Americans
(2) Native Indians
(3) Alaskan Natives
(4) Hispanics
(5) Asian Americans
(6) Native Hawaiians and Pacific Islanders

It is important to understand that "severely disadvantaged communities" and "Socially Disadvantaged Farmers and Ranchers" are not one in the same. "Severely disadvantaged communities" are communities defined based on financial parameters and *any* farmer or rancher that lives within a DAC would be able to check that box. Whereas, "Socially

Disadvantaged Farmers and Ranchers" are defined based on race and apply directly to the individual farmer that is applying for the grant.

**State Water Efficiency and Enhancement Program**

**Add Socially Disadvantaged Farmers and Ranchers to the Additional Criteria options.** Similar to the Healthy Soils Program, CDFA must add socially disadvantaged farmers and ranchers as part of their Additional Considerations within the Review and Evaluation Process for grant awarding.

**Further Recommendations**

**Provide Adequate Outreach To Socially Disadvantaged Farmers & Ranchers.** It is imperative that CDFA provide effective and culturally appropriate outreach to farmers of color about these programs. Appropriate outreach materials may include for example, flyers, sample applications, and radio segments. Materials should be in multiple languages and should help simplify their application process. Cultural competence when working with a diverse population of farmers of color is essential.

The California Farmer Justice Collaborative wants to thank CDFA for their hard work and dedication to addressing the now ever-present struggle to mitigate climate change and the effect it has on farmers. The Climate Smart Agriculture programs are helping move us in the right direction and it is crucial we carve out space for our socially disadvantaged farmers and ranchers within these programs.

Please feel free to contact Beth Smoker at beth.smoker@panna.org if you have any questions.

Sincerely,

B Smoker

Beth Smoker
Co-Facilitator, California Farmer Justice Collaborative

FIBERSHED

Local Fiber, Local Dye, Local Labor

September 12, 2018

Secretary Karen Ross
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

Re: Comments on the Draft Request for Applications for the HSP

Dear Secretary Ross;

Thank you for the opportunity to submit comments regarding the Draft Request for Applications for the Healthy Soils Program (HSP) on behalf of Fibershed, a nonprofit organization developing regional fiber systems that build soil and protect the health of our biosphere.

Fibershed's Producer Membership includes over 80 producers of fiber animals and crops in Northern and Central California, who manage more than 75,000 acres of private land across all scales of production. Our organization supports partnerships between producers and local technical service providers such as RCD and NRCS offices, provides educational opportunities on carbon farming practices, and offers networking and marketing support for our producers. We have a very high level of interest among our members to develop Carbon Farm Plans (CFPs)- with five producers having completed CFPs and 37 producers in our CFP development program- and much interest expressed in implementing practices that can sequester carbon and build healthier soils on their farms and ranches.

We worked directly with several of our members to research and support HSP applications during the first round of HSP grantmaking in 2017-18. Five of our members were awarded grants, although the number of members initially interested was much higher. The reasons given by most producers who decided not to go ahead with an application included: 1) practices they were interested in were not included; 2) reimbursement rates were insufficient relative to the cost of implementation (especially for compost application); 3) the length and complexity of the application was overwhelming.

We are grateful for the opportunity to offer the following comments on the draft guidelines released July 26, 2018 for the California Healthy Soils Program, based on the experiences and feedback of our members.

PO Box 221 San Geronimo, CA 94963
office@fibershed.com

**Application Format**
We appreciate the longer application window that will be better timed (November/December) for the annual schedule of producers. We are also glad to hear that a new application platform is being developed to make the application simpler and more streamlined for producers. Several of our producer members were initially interested in applying for an HSP grant but didn't follow through due to the long and complex application. We hope that the new platform will eliminate the numerous attachments that were required in the previous framework, and will replace essay questions with a menu of pre-drafted options.

**Third Party Verification**
We have heard from several of our producers, and from other California organizations working with producers, that it was often difficult for producers to arrange practice verification site visits with CDFA staff in a reasonable timeframe for producers. This made implementation much more challenging for producers.

The successful model that SWEEP has built to use third party verification through local/regional RCD offices offers a way for the verification process to be more efficient and utilizes the strength of the existing local/regional network of Technical Assistance providers who are already skilled at this type of on-site work with producers. We encourage you to develop a third party verification system for HSP to help producers to have more flexibility and accessibility in setting up practice verification appointments.

**Reinstate 25% upfront payments for practices**
Last year's Healthy Soils Program offered an advance payment of 25% of the grant amount to producers, but that policy has been removed in the current draft. Most producers cannot easily afford to pay upfront for these practices. This change will make the program less accessible to many producers. Please reinstate a policy of providing 25% of the grant as an upfront payment to support inclusion by producers who would otherwise be unable to participate.

**Rangelands Compost Application**
We urge you to reconsider the incorporation of a one-time compost application protocol for rangelands to the Incentives Program. Research on soil carbon sequestration impacts of compost application to rangelands in California has focused on a one-time application of compost, not an annual application[1]. Peer reviewed research documenting this protocol is already based on multiple sites across the state, with ongoing research now expanding the scope. Inspired by these results, land managers throughout California are increasingly interested in the potential of this protocol. Demonstration and test sites using this one-time rangelands compost application protocol have been established across a wide range of agroecosystems, with preliminary results reporting carbon sequestration benefits across multiple

[1] Rebecca Ryals, Michael Kaiser, Margaret S. Torn, Asmeret Asefaw Berhe and Whendee L. Silver, Impacts of organic matter amendments on carbon and nitrogen dynamics in grassland soils, *Soil Biology and Biochemistry*, 68, (52), (2014).

test sites in diverse conditions[2] [3]. We see increasing evidence that compost application to rangelands could be a practice with significant impacts on greenhouse gas mitigation and soil carbon sequestration across the state if implemented at scale[4].

Annual application of compost to rangelands in three consecutive years is not an economically viable protocol at scale. While this was possible for some demonstration projects to take on in last year's HSP, given the higher payments allowed in the demonstration program, this protocol is inaccessible for producers, and will not be scalable across our state. The cost of hauling and spreading compost is significant, in some cases as high or higher than the cost of the compost itself. Requiring this process be repeated three times on rangelands is impractical and irrelevant for working ranchers, something that has been emphasized in every conversation we have had with our members about this practice.

The HSP should be seeking to jump-start adoption of effective practices that can be replicated widely beyond the life of these grants. If the incentives are well-designed, HSP can be an effective tool to move our state forward in implementing critical practices like this at scale. Improving the reimbursement rate by combining the payments into one year and shifting the requirement to a once per 10 year application of compost to rangelands will make this scientifically verified practice more attainable on a meaningful scale.

**Prioritize Incentives, Education and Outreach**

HSP demonstration projects should focus on activities to support producer adoption, education and outreach/demonstration. The Type A "research" projects that require GHG emissions monitoring are not within the intended mandate of this program, and are not representative of the parameters needed for robust scientific research.

**Refine Quantification Methodology to Reflect Evolving Research on Integrated Crop-Livestock Systems**

Many of our producer members are interested in developing approaches for integrating crops and livestock within carefully managed grazing systems to maximize soil carbon sequestration. Targeted grazing for different purposes will have varying levels of soil building and carbon sequestration outcomes. Stacking the functions of various practices (e.g., no till, cover cropping, prescribed grazing, among others) may have enhanced sequestration benefits as compared to that produced by individual practices alone. We encourage you to continue working to refine allowed practices and quantification methodologies to incorporate a growing body of research

[2] Mayer, Allegra and Whendee L. Silver. Potential for Soil Carbon Sequestration through Rangeland Management. Presentation: Economics of carbon sequestration in agro-ecological systems workshop, Rush Ranch, Solano County, CA. April 11 2018

[3] Alvarez, P., et al. Poster: Carbon Sequestration in Agroecological Systems. California Climate Change Symposium; Sacramento January 25-26, 2017

[4] Rebecca Ryals, Melannie D. Hartman, William J. Parton, Marcia S. DeLonge and Whendee L. Silver,Long-term climate change mitigation potential with organic matter management on grasslands, *Ecological Applications*, 25, 2, (531-545), (2015)

on prescribed and targeted grazing in integrated cropping systems, and to consider including 'Integrated Crop and Livestock Systems' as an incentivized practice in the future.

**Technical Assistance**

We applaud the program's current emphasis on one-on-one Technical Assistance, which we found to be essential for our members who applied in the previous round. We have seen that it is critical to engage producers with Technical Service Providers to support them in the planning and development of these projects. To ensure the success of HSP-funded projects, we would also like to see Technical Assistance funds able to support some of the costs associated with outreach by RCDs and other TA providers to their constituents, as well as support for implementation. Successful projects require access to experts who can offer advice and support as producers are trying out practices that are new to them. We encourage you to create a more flexible payment system for TA providers to accommodate these needs.

Thank you for the opportunity to provide this feedback informed by our producer membership. We are excited about the potential for producers on working lands in California to meaningfully address the carbon imbalance in our ecosystems, while improving the resilience of their own operations.

Respectfully,

Rebecca Burgess
Executive Director, Fibershed

PO Box 221 San Geronimo, CA 94963
office@fibershed.com

Environmental Farming Act Science Advisory Panel
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814
cdfa.oefi@cdfa.ca.gov

September 12, 2018

**Re: Healthy Soils Program Draft Request for Grant Application (RGA)**
(https://www.cdfa.ca.gov/egov/Press_Releases/Press_Release.asp?PRnum=18-044)

Dear OEFI staff,

Pesticide Action Network (PAN) and Californians for Pesticide Reform (CPR) thank you for the opportunity to comment on the draft RGA for the Healthy Soils Incentives Program.

We support the requirement that any project, at a minimum, must implement at least one of the Eligible Agricultural Management Practices on fields/APNs where it was not implemented previously. However, since it is clearly the desire to have *the greatest climate benefits*, we urge the CDFA to explicitly state that **multiple practices** (whether in the proposal or already implemented) would increase a project's evaluation score.

In the comments PAN and CPR submitted on June 19 to the OEFI regarding management practices under consideration for the Healthy Soils Program, we argued for adding **Integrated Pest Management** (CPS 595) to the list of supported practices. We were very disappointed to see no consideration of this practice in the RGA. We understand that there is probably no GHG reduction or C sequestration quantification measures available for this practice. However, as a key element in soil health and GHG reduction (from the production, transport and application) of pesticides, we urge the CDFA to work towards inclusion of this practice. One way to address this important practice in the short-term, is to recognize its inclusion in CDFA's list of ecosystem services, and as such it will be considered, at least indirectly, among "**environmental co-benefits**" in the Evaluation Criteria (p14).

In contrast, we are very happy to see 10 points allocated to whether or not a project benefits "severely disadvantaged communities." However, we would like to see the criteria include whether or not a **project serves socially disadvantaged farmers and ranchers**, as would be consistent with implementation of the Farmer Equity Act (FEA). This goes beyond simple economic criterion of household income and specifically considers the needs and challenges faced by historically disadvantaged farmers and ranchers of color, as is required by the FEA. We recommend that 10 points be allocated to that criterion, to accommodate those points, and 10 points be removed from project feasibility.

We support the following three elements for which we provide no additional detail. First, that HSP funds may be combined with other funds (e.g. NRCS, EQIP) as match for the same project, and second, that HSP Incentives Program funds may be combined with other funds from public and private sources as cost-share for the same project. We also applaud CDFA for including the

three-year post project requirements (practice implementation and documentation) in recognition that "benefits from implementation of practices are expected to be achieved in the long term."

The following sections provide more detail of our three key points.

1. **Prioritize proposals with greatest GHG benefits — encourage multiple practices**

The growing literature on agroecology and carbon farming clearly demonstrate that GHG emissions reduction and C sequestration benefits generally increase with the greater number of practices, especially when those practices include woody species (e.g. silvopasture, agroforestry, hedgerows, etc.). We therefore would like to see the RGA specifically prioritize projects that implement more than one eligible practice, either as part of the grant or as a result of management decisions and practices prior to, and continuing into, the grant period. We understand and support that project funds are limited to those projects with no prior HSP funding.

We applaud the excellent list of allowed practices and are particularly pleased to see inclusion of both herbaceous and woody cover including all those marked with an asterisk.

2. **Elevate the importance of environmental co-benefits, including reduction in use of hazardous pesticides**

Under virtually all anticipated climate change scenarios, pest and disease problems are expected to increase. Just as healthy soils beget healthy crops (and clean water), so too do healthy crops and cropping systems impart greater resistance to pests and disease. Greater plant vigor and cropping system diversity together lead to substantial reductions in the need for pest control products including petroleum-derived pesticides that are hazardous to human health and the environment. (See appendix)

Not only does reduction in pesticide production and use reduce GHG emissions, but it also directly protects soil health as pesticides have negative effects on the foundation of soil health – the soil biological community. Of course, reductions in pesticide use have undeniable benefits from reduced exposure among farm communities, farm workers and consumers, along with protection of water resources.

We will never be able to achieve the full potential of healthy soil practices without eliminating the use of products designed to kill biological organisms. Even if the intended targets of pesticide applications are not the immense and diverse soil biological community, their use will nonetheless have negative impacts on their ability to function well or optimally.

We argue that integrated pest management (IPM) (CPS 595) should be specifically recognized as a healthy soil practice. One element of IPM that is most directly related to soil health is plant diversity among both economic crops and surrounding vegetation, that function to disrupt pest cycles and provide habitat for natural enemies of crop pests. In this context, we fully support the requirement to provide a qualitative description of the environmental co-benefits of the proposed project such as water and air quality improvements, and ecosystem services in both the short-term (within three years) and long-term (beyond three years).

To help applicants better understand and answer this section, we recommend that CDFA provide a link to the CDFA Ecosystem Services Webpages (https://www.cdfa.ca.gov/oefi/ecosystemservices/)

We understand the requirement to have GHG reduction estimates for all supported practices. Such estimates are not yet available for reduction in pesticide use (from production, transport and application; as well as from impact on soil biology). CDFA should commit to determining these values in a reasonable timeframe followed by inclusion of IPM in the list of practices. To begin, IPM benefits could be measured as quantifiable reduction in the use of non-organic-approved pesticides.

3. **Improve service to socially disadvantaged farmers**

We are pleased to see that "CDFA-funded Technical Assistance (one-to-one on-demand assistance) across the state will be provided free of cost to all potential applicants" and that the TA contact information will be available on the HSP Incentives Program website.

In recognition of the Farmer Equity Act and utilization of the soon-to-be-hired Farmer Equity Officer, the CDFA should provide training for TA providers on how to most effectively reach out to and assist socially disadvantaged farmers and ranchers. The additional TA resources available to this demographic should be spelled out in this RGA.

**Research Program Should not undermine support for and intent of HSP**

We have serious concerns about the use of these funds for research. Research is indeed very important, but should be supported with other funds leaving these GGR funds to primarily support on-farm implementation and demonstration projects.

We have no opposition to one-time compost applications to grazed grasslands, whole almond (or other tree crop) orchard recycling, or application of vermicompost or compost tea. We are hesitant to support research into the efficacy of the application of mychorrhizal fungi, since the literature seem to indicate (from minimal literature review) that much more important are practices of crop or cover selection (as fungal hosts) and no- or minimal-tillage to protect mycorrhizae in the field.

**Nutrient management supports should be limited to replacement of synthetic fertilizers**

That said, we do support the inclusion of nutrient management practices that are designed to replace synthetic fertilizer use with soil amendments (CPS 590). However, these practices should emphasize **replacement** of synthetic N fertilizers rather than use of slow release synthetic N products (addressed in our June 19 comment letter) or use of nitrate inhibitors.

**In conclusion we reiterate our key requests:**

1. Specifically prioritize implementation of multiple practices that together will impart greater climate benefits — either as part of the project or a combination of current and new practices multiple practices.
2. Include IPM (CSP 595) as a healthy soil practice through reduction in production and use of petroleum-derived pesticides and in recognition of its contribution to and valuation of environmental and social justice co-benefits.

3. Include a 10-point criterion of Benefit to Socially Disadvantaged Farmers and Ranchers.

Thank you for your attention.

Sincerely,

Margaret Reeves, PhD
Senior Scientist
Pesticide Action Network

Sarah C. Aird, Esq.
Co-Director
Californians for Pesticide Reform

Appendix – Pesticides and Soil Health

**Background and context**
According to the 2017 Human Rights Council of the UN General Assembly "Pesticides can persist in the environment for decades and pose a global threat to the entire ecological system upon which food production depends. Excessive use and misuse of pesticides result in contamination of surrounding soil and water sources, causing loss of biodiversity, destroying beneficial insect populations that act as natural enemies of pests and reducing the nutritional value of food."[1]

The soil biological community plays a fundamental role in nutrient cycling. As such, any pesticide-mediated changes in organic matter decomposition and N and C transformations will likely also affect the use or release of N (including release of $N_2O$ into the environment). It would be inappropriate to dismiss the impacts of pesticides both on soil health generally and on nutrient cycling specifically (especially N and C).

**Pesticides harm the soil biological community and its functions**
Only about 0.1% of applied pesticides reach the targeted organism while the remaining amount contaminates the soil and surrounding environment.[2] The soil biological community associated with healthy soil is extraordinarily diverse — from spatial heterogeneity, organism diversity and function (e.g. nutrient cycling and acquisition, suppression of phytopathogens, and providing resistance to biotic and/or abiotic stressors). Unfortunately, while the research on the detrimental impacts of pesticides on the soil biological community is not well-developed, it is strongly suggestive that pesticides can significantly alter fundamental roles of soil organisms in organic material decomposition and nutrient cycling, among other functions.

The impacts of pesticides on N cycling bacteria is perhaps most clearly relevant to $N_2O$ emissions, though the interactions among diverse soil organisms will necessarily influence the

function of N-cycling bacteria and other N-cycling organisms.[3,4,5,6,7] Martinez-Toledo et al. (1998) documented that applications of the fungicide Captan led to decreases in the population of aerobic diazotrophs (nitrogen-fixing bacteria and archaea). Nitrogenase activity, which is the key enzyme involved in nitrogen fixation has also been shown to be less prevalent in soils exposed to pesticides.[8] If N fixation is inhibited, then greater N applications will be required, and hence probability of increased $N_2O$ emissions, especially with synthetic N applications. More directly however, Martinez-Toledo et al. also found that applying the recommended doses of Captan increased the population size of denitrifiers, and potentially production of $N_2O$.

Treatment of soils with broad-spectrum soil fumigants leads to multiple negative impacts on the soil biological community and its multiple functions. Fumigation with chloropicrin is associated with 7-8-fold increases in the production rate of $N_2O$[9] with the suggested mechanism being primarily from aerobic fungal processes rather than the commonly described anaerobic bacterial denitrification as the source of $N_2O$.[10] In another study, fumigation with the fumigant MITC alone and in combination with chloropicrin also increased $N_2O$ emissions significantly.[11] A study of the impacts of the fumigant metam sodium on soil microbial community showed persistent changes (lasting at least 4 months) in heterotrophic activity and fatty acid composition of the microbial biomass suggesting alteration of important microbially mediated functions such as nutrient cycling.[12]

Neonicotinoid insecticides can cause significant adverse effects on key soil organisms and persist in soils for several years. At realistic field concentrations, the leaf-borne residues of the pesticide imidacloprid resulted in a significant reduction in leaf litter breakdown, causing detrimental effects to earthworms and soil microbes. Imidacloprid has also been shown to be associated with decreased fungal abundance and significant changes in levels of nitrate-N, ammonium, nitrite-N, and nitrate reductase enzyme activity, among other impacts.[13]

**Reducing pesticide use and production reduces GHG emissions**

Reducing synthetic pesticide use will reduce GHG emissions from production as well. Chemical production is an energy-intensive process, accounting for approximately 20% of the total industrial US energy used. The range of energy required for production of some common organic chemicals ranges from 10-70 gigajoules per tonne. We do not know the precise amount of energy consumed per tonne in the production of the different fumigants, but in California, approximately 13,600 tonnes of fumigants are used every year, accounting for approximately 17% of the total agricultural pesticide use. A central estimate of energy use per tonne of 35 gigajoules per tonne would indicate that fumigant production utilizes approximately 500,000 gigajoules of energy in California. A reduction in fumigant use would thus result in decreased greenhouse gas emissions.[14]

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[1] UN General Assembly, Human Rights Council, Thirty-fourth session, 27 February-24 March 2017. Agenda item 3, Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development, Report of the Special Rapporteur on the right to food. A/HRC/34/48. Paragraph 32, p.9.

[2] Hussain S, Siddique T, Saleem M, Arshad M, Khalid A. 2009. Chapter 5 Impact of Pesticides on Soil Microbial Diversity, Enzymes, and Biochemical Reactions. In: *Advances in Agronomy*. Vol. 102 of. Elsevier. 159–200; doi: https://doi.org/10.1016/S0065-2113(09)01005-0.

[3] Druille M, Cabello MN, Omacini M, Golluscio RA. 2013. Glyphosate reduces spore viability and root colonization of arbuscular mycorrhizal fungi. Applied Soil Ecology 64:99–103; doi: https://doi.org/10.1016/j.apsoil.2012.10.007.

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[5] Nicolas V, Oestreicher N, Vélot C. 2016. Multiple effects of a commercial Roundup® formulation on the soil filamentous fungus Aspergillus nidulans at low doses: evidence of an unexpected impact on energetic metabolism. Environmental Science and Pollution Research 23:14393–14404; doi: https://doi.org/10.1007/s11356-016-6596-2.

[6] Casabé N, Piola L, Fuchs J, Oneto ML, Pamparato L, Basack S, et al. 2007. Ecotoxicological assessment of the effects of glyphosate and chlorpyrifos in an Argentine soya field. Journal of Soils and Sediments 7:232–239; doi: https://doi.org/10.1065/jss2007.04.224.

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[8] Martınez-Toledo MV, Salmeron V, Rodelas B, Pozo C, Gonzalez-Lopez J. 1998. Effects of the fungicide Captan on some functional groups of soil microflora. Applied Soil Ecology 7: 245–255; doi: https://doi.org/10.1016/S0929-1393(97)00026-7.

[9] Spokas K, Wang D. 2003. Stimulation of nitrous oxide production resulted from soil fumigation with chloropicrin. Atmospheric Environment 37 (2003) 3501–3507

[10] Spokas K, Wang D, Venterea R, Sadowsky M. 2006. Mechanisms of $N_2O$ production following chloropicrin fumigation. Applied Soil Ecology 31 (2006) 101–109.

[11] Spokas K, D Wang, Venterea. R. 2004. Greenhouse gas production and emission from a forest nursery soil following fumigation with chloropicrin and methyl isothiocyanate. Soil Biology & Biochemistry 37 (2005) 475–485

[12] Macalady JL, Fuller ME, Scow KM. 1998. Effects of Metam Sodium Fumigation on Soil Microbial Activity and Community Structure. J. Environ. Qual. 27:54-63.

[13] Madeleine C, Kreutzweiser D, Mitchell EAD, Morrissey CA, Noome DA, Van der Sluijs JP. 2015. Risks of large-scale use of systemic insecticides to ecosystem functioning and services. Environ Sci Pollut Res (2015) 22:119–134.

[14] Worrell E, Phylipsen D, Einstein D, Martin N. 2000, Energy Use and Energy Intensity of the U.S. Chemical Industry, Lawrence Berkeley National Laboratory, http://industrial-energy.lbl.gov/node/86.

**From:** Harper, Elizabeth - FPAC-NRCS, Colusa, CA
**To:** CDFA OEFI@CDFA
**Subject:** Public Comment on Draft RFAs
**Date:** Wednesday, September 12, 2018 12:24:31 PM

To Whom It May Concern,

On behalf of Colusa County producers I am initially commenting on the draft Healthy Soils Initiative Program Request for Applications. Then, I will reiterate listening session feedback regarding CDFA's grant guidelines that could potentially limit resource conservation and implementing sustainable practices in our region.

The RCD received most feedback pertaining to the HSP application process being cumbersome and time-consuming. One rancher explains, "I don't want to be negative, but the HSP requires way more time than it's worth. I don't think many of the potential applicants would get any farming or ranching work done, because all their time will be spent preparing this application and then if selected monitoring it.".

In addition, a local grower shares similar sentiments adding a lack of timely review stating, "I must say, I found the application process extremely difficult to work through. I did receive some assistance from the RCD office, but pretty much ended up submitting on my own. I only discovered several months later after not hearing about the results of my application, that they had not received one of my pages and therefore was disqualified. It sure would have been more helpful if I had been notified when they received my proposal, that I had failed to send everything in.".

I see both of these comments as opportunities for our RCD to offer more assistance throughout the application process especially reviewing the documents for accuracy and completion before submitting.

Although, I would appreciate the CDFA to strongly consider options to simplify questions and limit the amount of "figuring" (for lack of better word) required by the producer.

On these same lines, a producer suggests that, "I would encourage them to drastically simplify the process and if possible have a workshop day where applicants can complete their proposals with staff assistance.".

This is a great idea in which I would add the need for financial and technical support from CDFA if our RCD is to beef up our outreach and assistance on these initiatives.

Comments given at the listening session on August 30th that I would like to echo relate to the use of APNs to track projects. This can limit the reach of climate smart agriculture by:

1. There can be more than one field per APN
2. The ability to apply for an additional management practice within the same APN.

Finally, thank you for the opportunity for public comment. I witnessed at the listening session the CDFA staff graciously received prior feedback and have made some great improvements. We are grateful for the next application round and continue to see the positive impacts these grants make in our county.

Thank you,

Liz Harper
Assistant Executive Director
Colusa County Resource Conservation District
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Fax: 844-206-6976
Elizabeth.harper@ca.ncdanet.net

COLUSA COUNTY

RESOURCE
CONSERVATION DISTRICT

| | |
|---|---|
| **From:** | Heather Koshinsky |
| **To:** | CDFA OEFI@CDFA |
| **Subject:** | Public comment on Health Soils Incentives Program |
| **Date:** | Tuesday, September 11, 2018 11:25:30 PM |

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This is a great initiative.

I support one comment on the need for a public soil testing lab. Having this in place would remove the type of testing as a variable in the analysis.

Could compost tea be included in as a type of compost application? It seems to be promising, but I have not been able to locate information on application rates.

Best regards,
Heather

--
Heather Koshinsky, PhD, MBACert
koshinskyh@gmail.com
510-299-9157

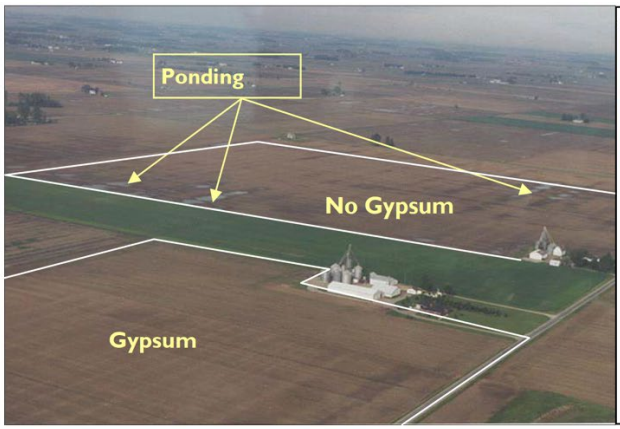
# Field Spread Dyhydrite Gypsum

Use of irrigation water with high sodium & pH combined with low calcium & magnesium causes soil to disperse, meaning that individual soil particles act independently from each other.[1] This is a common characteristic of irrigation water on wells located south of Merced, CA. The dispersion of soil particles destroys soil structure and prevents water movement into and though the soil by clogging pore spaces.[2] When this breakdown occurs in the soil structure, soil sealing, soil crusts or "cementing" follows.[3] Surface sealing greatly reduces infiltration and increase runoff and erosion.[4]

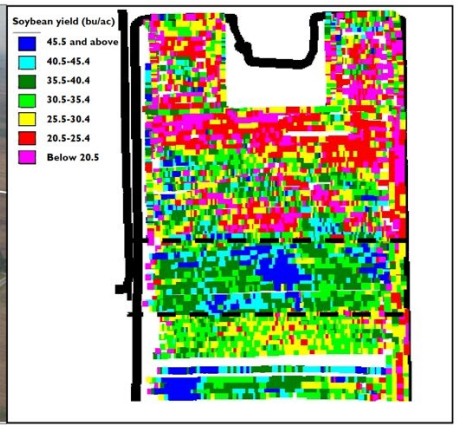
[5]

*Figure 2-6. Dispersion of soil particles and then surface drying creates a crust that impedes seedling emergence. Gypsum as a soil amendment can improve soil physical properties to prevent dispersion and surface crust formation. (Dontsova et al., 2005; Norton et al., 1993.)*

Gypsum is a naturally occurring mineral that is in a crystalline form which contains Calcium and Sulfur in sulfate form. Dyhydrite Gypsum is a rich, readily available source of calcium that can be used to improve the water holding capacity of the soil, correct soil crusting conditions and slightly reduce the amount of nitrogen needed without sacrificing yield. Calcium replaces sodium molecules in the soil which helps restore the water holding capability. [6] "The greatest benefit of gypsum addition is on better water/air infiltration and drainage and stabilizing soil structure which results in decreased crusting", Dr. Darell Norton. Visual effects of applying dyhydrite gypsum to increase infiltration rate can be seen in the attachment USDA Fact Sheet Gypsum.




Effect of Gypsum on infiltration/drainage on a Paulding clay.




Soybean yield with 1t/a surface applied gypsum in 2005 on Blount complex field. Treated area inside black dashed line.

[7]

[1] The Relationship Between Salts In Irrigation Water And Soil Structure Pg 1
[2] Managing Salt Effected Soils, Pg 5
[3] Irrigation Water Quality Standards and Management Strategies pg. 12-13
[4] Soil Quality for Environmental Health Soilquality.org - http://soilquality.org/indicators/soil_crusts.html
[5] Gypsum as an Agricultural Amendment Pg 10
[6] Irrigation Water Quality Standards Pg 13
[7] USDA Fact Sheet Gypsum

A study by the University of California Cooperative Extension found that applying gypsum through the water increased available soil moisture by 8%.[8]

There are 2 main types of gypsum, Anhydrite and Dyhydrite gypsum.

In an anhydrite form there is no water associated within the crystals, just Ca and S. In the dyhydrite gypsum there are 2 molecules of water attached to the Ca and S.

Anhydrite --> $CaSO_4$
Dyhydrite Gypsum --> $CaSO_4 – 2H^2O$

When gypsum becomes soluble in water the calcium separates from the sulfur. The faster this separation can occur, the more effective the calcium can replace the sodium molecules. With anhydrite this separation happens at a much slower pace and becomes less effective in reducing compaction layers, leaching potential and sodium remediation. Dyhydrite is more effective because the separation of calcium from the sulfur is almost instant when it interacts with water, this increases it's solubility and makes it a readily available calcium.

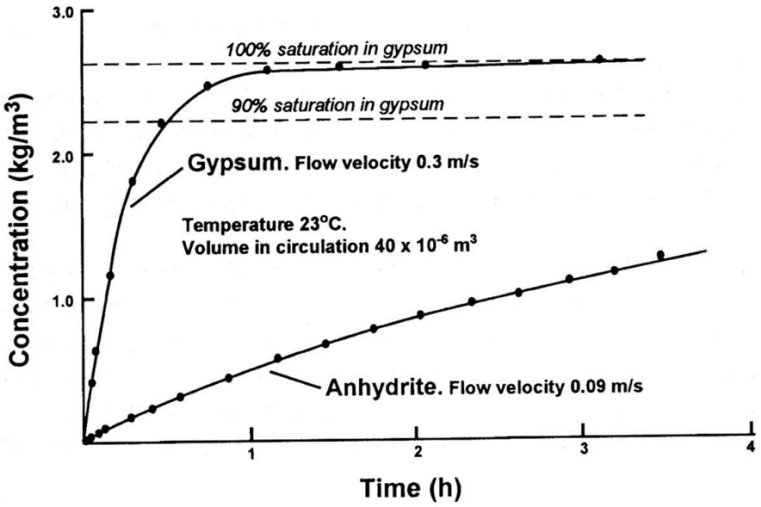



Fig. 9. Dissolution rates of gypsum (a) and anhydrite (After James & Lupton, 1978).

[9]

A study in Ohio was conducted to test a sulfur-by-nitrogen nutrient interaction for corn production. Nitrogen was applied as ammonium nitrate ($NH_4NO_3$) and sulfur was applied as gypsum. Results indicated sulfur application significantly ($P \leq 0.05$) increased the yield of corn compared to the no-sulfur control treatment in 2003. There was a sulfur-by-nitrogen interaction in 2004 and 2005 with sulfur increasing relative yields more at the low nitrogen application rates than at the high nitrogen rates. This result suggests that reduced nitrogen inputs and increased yield could offset the cost of applying gypsum and would also diminish the potential for nitrate contamination of surface and ground waters.[10]

Due to my high sodium and pH water Dyhydrate gypsum allows me to prevent soil sealing which results in better infiltration, less runoff and a smaller amount of pooling on the soil surface. This results in using a reduced amount of irrigation water and decreased pump usage resulting in reduced Greenhouse gases. We are estimating to see a reduction of at least 8% of water usage and 8% of energy use.

[8] Use of Gypsum to Improve Infiltration in California Agriculture and to enhance Almond Production Pg 68
[9] THE DISSOLUTION AND CONVERSION OF GYPSUM AND ANHYDRITE Alexander Klimchouk Pg 29
[10] Increased Crop Yield and Economic Return and Improved Soil Quality Due to Land Application of FGD-Gypsum, Chen Pg 2

**From:** Michael Alms <michael@growingsolutions.com>
**Sent:** Wednesday, September 12, 2018 5:51 PM
**To:** CDFA OEFI@CDFA <CDFA.OEFI@cdfa.ca.gov>
**Subject:** Comment on Health Soils Incentives Program

To Whom it may concern,

I have been involved in the safe and consistent production of compost tea for 22 years throughout California on a wide range of crops. Please consider the inclusion of *compost tea, compost extracts and/or compost-based biological solutions* for crop production systems - in the same spirit compost is used. Compost teas provide an alternate to compost, whereas similar benefits can be applied via an irrigation system versus field applied bulk compost.

I appreciate the work you are engaged in to bring safe and more environmentally sound practices, as well as more cost effective options to modern agricultural production disciplines.

With my regards,

Michael Alms
President
Growing Solutions
SF, CA 94130

**From:** BECKY WHITE <becky@makeartnow.org>
**Sent:** Thursday, August 23, 2018 5:02 PM
**To:** CDFA OEFI@CDFA <CDFA.OEFI@cdfa.ca.gov>
**Cc:** Kelly, Tiffany@CDFA <Tiffany.Kelly@cdfa.ca.gov>
**Subject:** Public Comment On the Healthy Soils Program

Dear CDFA Healthy Soils Program,

I am writing to submit my public comment about your Healthy Soils Program. I am a recent recipient of a Healthy Soils Grant for the 2018 cycle for my project: *Stubbs Vineyard Carbon Farm Program - Compost and Cover Crop Application to Vineyard.*

We are thankful to receive the grant and excited to carry out this project, however upon looking into project costs from local vendors of where to purchase our cover crop seeds and compost I am afraid the budget that was proposed by the CDFA Healthy Soils Project is unrealistic and leaves me with serious reservations about beginning the project.

I've attached a sample budget of what it will take to complete our project for the next three years with current prices from local vendors; and our total material costs are 2x more than what is covered in the grant's calculated budget. Also the Heathy Soils Grant leaves out labor and any added equipment rental fees which I've included in my budget, which adds up to be a significant cost over the course of three years.

I urge the CDFA Healthy Soils Program to take the real costs of the project into account. Perhaps it might be helpful to provide grant recipients access to vendor information in their area of where to source project needs per your calculations. I would also urge CDFA to cover labor costs as a separate line budget.

I'm afraid I'm considering canceling my grant as it is not possible for me to cover the hidden project costs.

Thank you so much for your time. I am more than happy to discuss further.

All the Best,

Becky White

STUBBS VINEYARD

Stubbsvineyard.com
510.684.0215
becky@makeartnow.org

**From:** Marc Malakie <marc@hempsense.net>
**Sent:** Tuesday, July 31, 2018 2:55 PM
**To:** CDFA OEFI@CDFA <CDFA.OEFI@cdfa.ca.gov>
**Subject:** Hemp Sense | New Soil Product Supplier for the California Healthy Soils Program

Hello California Healthy Soils Program,

We found you in the CA Dept of Food & Agriculture directory and are excited to introduce our new fibril soil enricher product to you.

Hemp Sense processes industrial hemp to produce patented environmentally friendly hemp products.

In 2017 we opened our 30,000 square foot processing plant just west of Gilbert Plains, Manitoba. The focus of our business is to capture the value of the versatile qualities of 100% hemp straw in the production of patented crumble for hemp fibril soil enricher and other uses.

## Environment Friendly Benefits & Selling Points

- 100% Biodegradable & Compostable
- Patented Zero-Waste / Zero-Water Plant Process System
- No Chemicals, No Additives, PH Neutral
- Ideal for Absorbing & Retaining Water/Liquids
- Absorbs 4-5 Times its Weight in Moisture
- Conserves Moisture - allows for reduced watering
- Supplies Organic Matter to the Soil
- Protects Plant Roots from Extreme Temperatures
- Free of Noxious Weeds, Insects and Diseases
- Eliminates Moisture Stress in Shallow-rooted Plants
- Free of Chemicals During Growth & Manufacturing
- Eco-Friendly Natural Products
- Superior Insulating Properties - protecting the soil in hot summer or cold winter periods
- Aesthetically Pleasing and Beneficial Soil Effects
- Great for Low and Easy Maintenance Gardening
- Suppresses & Reduces Weeds

## Hemp Sense Fibril Soil Enricher

(click link for product details and demo video)

We are interested in presenting our fibril soil enricher to you for consideration as we're confident your state parks, farmers, landscapers and ranchers will be delighted with the quality and price point of the Hemp Sense brand. Please see attached for detailed product description.

Do you have a scheduled day or set phone hours to arrange a follow-up call?

Thank you for your time and consideration – together I look forward to making a positive environmental impact for our state on multiple agricultural levels.

Best,

-Marc

**Marc Malakie**
National Account Manager

marc@hempsense.net
hempsense.net
415 340 2409
LinkedIn: Connect

Office Hours: M-F 8-5pm PST

**From:** Andrew Johnson <andy.usltrcd@gmail.com>
**Sent:** Tuesday, August 14, 2018 11:56 AM
**To:** CDFA OEFI@CDFA <CDFA.OEFI@cdfa.ca.gov>
**Subject:** Healthy Soils Demonstration Project

Hello,

I work with a Resource Conservation District on the Central Coast. We work with several cannabis farmers who have expressed interest in the program. Are cannabis operations allowable applicants at this point? Thanks for the help.

*Andrew Johnson*
*Project Manager*
*Upper Salinas-Las Tablas Resource Conservation District*
*(805) 434-0396 ex.3175*

**From:** Jesse Roseman <jroseman@almondboard.com>
**Sent:** Wednesday, September 5, 2018 4:03 PM
**To:** CDFA OEFI@CDFA <CDFA.OEFI@cdfa.ca.gov>
**Subject:** Question on Whole Orchard Recycling

Hi,
Could you let me know if Whole Orchard Recycling is proposed as a funded project in this year's solicitation?
Thanks,
Jesse

**Jesse Roseman • Senior Specialist, Environmental and Regulatory Affairs**
**Almond Board of California**
1150 Ninth St., Ste. 1500 • Modesto, CA 95354 USA • T: +1.209.343.3285

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**From:** Thetis Sammons

**To:** CDFA OEFI@CDFA

**Subject:** Comments for the Healthy Soils Program Incentives, and Healthy Soils Demonstration Projects

**Date:** Wednesday, September 12, 2018 4:09:52 PM

Hello,

I am writing to offer my comments and questions for the Healthy Soils Program Incentives Program, and The Healthy Soils Program Demonstration Projects. I called in today and spoke with Tiffany Kelly with some of my preliminary questions.

I want to say Thank you very much to Kelly for helping me receive the answers I was looking for and directing me around the website in order to find more background information that would help me understand the current white paper on composts and where my suggestions may fit into the current program.

I currently work as an independent contractor/consultant in Agriculture for farmers, agriculture product distributors, manufacturers and technology companies. For several decades my work has centered around helping farmers implement sustainable practices that increase crop nutrition and soil health. Some of the newer inputs we have worked with in the industry are not mentioned specifically in this grant program, such as compost tea, and mycorrhizal fungi inoculums.

I would like to suggest that Compost Tea applications be included in the incentives program and the Demonstration Projects grant program, perhaps in the section under composts, or in the section on reduction of nitrogen and fertilizer use? More and more research and data are being published that show the inclusion of compost teas and foliar sprays with compost tea can both decrease the amounts of NPK fertilizers needed, but also add beneficial bacteria and soil carbon building biology to soils, while helping decrease plant diseases, and also decreasing heavy metals and fertilizer run-off from farm fields. I've attached a couple abstracts to help support this request.

One excerpt from recent research shows:

The results from this study support that the application of N110P24K40 (110 Urea: 24 P2 O5 : 40 K2 O kg ha-1 NPK) as two third of recommended doses of chemical NPK + basal application of compost as organic fertilizer + foliar spray of compost tea as bio-organic fertilizer in the permanent field at 40 days after transplanting (DAT) without any significantly differences with N165P36K60 as recommended NPK doses were able to improve Egyptian hybrid rice one cultivar and reducing chemical NPK fertilizers by one third. J. Sus. Agric .Sci. 43, No. 3 (2017) 148 NEHAL M. ELEKHTYAR et al.

**In total, consumption of compost and compost tea increased nutrients concentration and yield of rice and minimized the use of chemical fertilizers and environmental pollution.**

https://www.researchgate.net/profile/Nehal_Elekhtyar/publication/320169165_Utilization_of_Compost_and_Compost_Tea_for_Improving_Egyptian_Hybrid_Rice_One_Cultivar/links/5a679b3e4585159da0d9f4e8/Utilizationof-Compost-and-Compost-Tea-for-Improving-Egyptian-Hybrid-Rice-One-Cultivar.pdf?origin=publication_list

Also, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4564151/

Abstract:

This study investigated the chemical characteristics and microbial population during incubation of four kinds of aerated compost teas based on oriental medicinal herbs compost, vermicompost, rice straw compost, and mixtures of three composts (MOVR). It aimed to determine the effects of the aerated compost tea (ACT) based on MOVR on the growth promotion of red leaf lettuce, soybean and sweet corn. Findings showed that the pH level and EC of the compost tea slightly increased based on the incubation time except for rice straw compost tea. All compost teas except for oriental medicinal herbs

and rice straw compost tea contained more NO−3-N than NH+4-N. Plate counts of bacteria and fungi were significantly higher than the initial compost in ACT. Microbial communities of all ACT were predominantly bacteria.

The dominant bacterial genera were analyzed as *Bacillus* (63.0%), *Ochrobactrum* (13.0%), *Spingomonas* (6.0%) and uncultured bacterium (4.0%) by 16S rDNA analysis. The effect of four concentrations, 0.1%, 0.2%, 0.4% and 0.8% MOVR on the growth of red leaf lettuce, soybean and sweet corn was also studied in the greenhouse. The red leaf lettuce with 0.4% MOVR had the most effective concentration on growth parameters in foliage part. However, 0.8% MOVR significantly promoted the growth of root and shoot of both soybean and sweet corn. The soybean treated with higher MOVR concentration was more effective in increasing the root nodule formation by 7.25 times than in the lower MOVR concentrations Results indicated that ACT could be used as liquid nutrient fertilizer with active microorganisms for culture of variable crops under organic farming condition.

I notice earlier mentions of compost tea as allowed for use in Organic systems in the rule below by the NOSB. But I have not had time to research exactly where this would fit with the current Healthy Soils Program or the Demonstration Projects Program.

Composted plant and animal manures (§205.203(c)(2)) are those that are produced by a process that: (i) established an initial C:N ratio of between 25:1 and 40:1; and (ii) maintained a temperature of 131°F to 170°F for 3 days using an in-vessel or static aerated pile system; or (iii) a temperature of between 131°F and 170°F for 15 days using a windrow composting system, during which period, the materials must be turned a minimum of five times. Alternatively, acceptable composts must meet the November 9, 2006 NOSB Recommendation for Guidance Use of Compost, Vermicompost, Processed Manure and **Compost Tea** that identifies materials and practices that would be acceptable under 205.203(c)(2).

Also, for many years the inclusion of mycorrhizal fungi innoculums have shown to help increase soil carbon through the formation of Glomalin, as well as help improve the use of fertilizers such as nitrogen and phosphorous, as well as increase micronutrient uptake. As part of the Grant Incentive program and the Demonstration projects Program I would like to suggest specific mention of mycorrhizal fungi innoculums as being allowed to be covered with part of the grant monies to help build healthy soils. Currently there are thousands of research papers and successful farm results using mycorrhizal fungi to improve soils, decrease fertilizer use, improve drought tolerance and help prevent farm run-off. But many farmers still see the fostering and maintaining of beneficial fungi in their soils as a non-critical luxury.

I believe the inclusion of mycorrhizal fungi, along with compost tea as part of the current grant programs can greatly improve the current cache of allowed tools and materials, as well as support the additional education and understanding of the roles these important materials serve, to help California growers build really healthy, carbon sequestering soils.

Here is just one abstract to highlight mycorrhizal fungi's role in carbon sequestration in soils.

University of Western Australia

Abstract

The arbuscular mycorrhizal (AM) symbiosis which is formed between the majority of terrestrial plants and ubiquitous soil fungi in the phylum Glomeromycota can contribute to nutrient transfer and soil carbon sequestration.

AM fungi have a role in C fluxes between plants and the atmosphere. They take up nutrients, especially phosphorus, from the soil and exchange them against photosynthetically fixed C from the host plant. Carbon is thought to be transferred from the plant to the intraradical hyphae through this symbiotic

interface, from where it is transported to the extraradical network which extends into the soil matrix. The extent of turnover of AM fungal hyphae in soil associated with the network of hyphae inside roots is difficult to quantify. AM hyphae may contribute to soil C sequestration through mechanisms such as rhizodeposition or soil aggregate formation. The mechanisms of soil C sequestration and nutrient regulation by AM fungi are linked. The C flux from the root to the fungus can be a key trigger for P and N uptake and transport in the AM symbiosis.

*(PDF) Contribution of Arbuscular Mycorrhizal Fungi to Soil Carbon Sequestration*.

https://www.researchgate.net/publication/270338608_Contribution_of_Arbuscular_Mycorrhizal_Fungi_to_Soil_Carbon_Sequestration

Also, here is one good article on the important role of mycorrhizal fungi serve to give plants drought tolerance, while improving soils. We all know how critical this is in California for our farms and growers.

https://phys.org/news/2015-12-fungi-drought-stressed-wheat.html

I would like to Thank You for considering my suggestions and comments for these two additions to the Healthy Soils Program Initiative, and the Demonstration Projects part of the Program: Compost Tea and Mycorrhizal Fungi Innoculum.

I look forward to working with our farmers, growers, manufacturers and academia to help apply and implement the beneficial practices outlined in the Grant program. Also to achieve the positive results in vastly improving our soils here in California, which will also help improve our waterways and water run-off quality as well.

Best Regards,

Thetis Sammons
805-886-6308