

2018 Healthy Soils Program Incentives Program

The Healthy Soils Program is funded by California Climate Investments and the California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for all Act of 2018.



Grant Award Procedures Manual

Updated 10/11/2019



California Department of Food and Agriculture
Office of Environmental Farming and Innovation
1220 N Street
Sacramento, CA 95814
cdfa.HSP_Tech@cdfa.ca.gov

Contents

Overview	4
Authority and Program Purpose	4
Purpose of the Grant Awards Procedures Manual	4
General Responsibilities	4
Office of Environmental Farming and Innovation	4
Grant Recipients	4
Recipient Resources	5
Prior Approval Required	5
Project Management	5
Project Updates.....	6
Cost Share	6
Allowable Costs	6
Unallowable Costs.....	6
Scope of Work Revisions	7
Notification of Problems and Delays.....	7
Invoicing	7
Invoicing for Payment.....	7
When to Submit Invoices.....	8
Completing an Invoice.....	8
Updated 10/11/2019 Advance Payments	8
Advance Payment Requests Procedures	8
Advance Payment Offset Invoice.....	8
Final Invoices	9
Withholds	9
Withhold Pending Closeout.....	9
Soil Testing Requirements	9
Reporting Requirements	9
Compliance.....	10
Project Verification	10
Termination of Grant Agreement.....	11
Appeal Process	11
Closeout.....	11
Record Retention	12

Post-Project Requirements	12
Critical Project Review	12
Appendix A: CDFA Invoice Template	13
CDFA Invoice Template Instructions and Definitions	14
Appendix B	16
Instructions to use NRCS California eVegGuide – Selecting Species for Planting.....	16
Appendix C	23
Soil Sampling Protocol for Soil Organic Matter Analysis.....	23
Soil Health Data	27
References.....	28
Appendix D	29
Payment Rates, Implementation Guidelines and Verification Requirements for 2018 HSP Incentives Program.....	29

Overview

Authority and Program Purpose

The Healthy Soils Program (HSP) stems from the California Healthy Soils Initiative, a collaboration of state agencies and departments that promotes the development of healthy soils on California's farmlands and ranchlands. The 2018 HSP Incentives Program provides financial incentives to California growers and ranchers for agricultural management practices that sequester carbon, reduce atmospheric greenhouse gases (GHG), and improve soil health. The program is funded by the Greenhouse Gas Reduction Fund (GGRF) and the California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for all Act of 2018 (Prop 68). All projects that receive GGRF monies are required by [Government Code Section 16428.9](#) to achieve GHG emission reductions and further the purposes of the Global Warming Solutions Act of 2006 ([AB 32](#)).

Purpose of the Grant Awards Procedures Manual

The HSP Incentives Program Grant Award Procedures (GAP) Manual provides direction to Grant Recipients (Recipients) for the successful management of HSP Incentives Program funded projects. The GAP Manual identifies the roles and responsibilities of the parties to the agreement and describes the processes and procedures required by the terms and conditions in the Grant Agreement.

General Responsibilities

Office of Environmental Farming and Innovation

CDFA's Office of Environmental Farming and Innovation (OEFI) will manage the HSP Grant Agreements and ensure Recipients are compliant with program requirements and grant terms and conditions. This will include providing Recipients with assistance and consultation throughout the Grant Agreement term, and consultation on technical aspects of project implementation as necessary. OEFI is also responsible for conducting practice verifications for the projects.

Grant Recipients

Recipients are responsible for project implementation as outlined in the Grant Agreement scope of work (SOW) which includes ensuring that all project activities comply with grant terms and conditions. Recipients are responsible for the timely submission of invoices upon completion of [Project Verification](#).

All management practices must be maintained for a minimum of three years. Implementation of the practice(s) must be according to United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Conservation

Practice Standards (CPS), 2018 HSP Incentives Program Request for Grant Applications (RGA) and/or guidelines in the [CDFA Compost Application White Paper](#). For Establishment of Woody Cover Practices, the expected practice life span is ten years. Reference the [Post-Project Requirements](#) section for details regarding expectations and responsibilities for continuing the implementation of management practices after the Grant Agreement term. Recipients should contact their assigned Grant Specialist with questions.

Recipient Resources

Forms and templates referenced in this manual, as well as other resources, can be found on the CDFA HSP Demonstration Projects [Recipient Resources page](#).

Prior Approval Required

Prior approval is required from OEFI for the following:

- Revision of the scope of work, eligible agricultural management practices, work plan, activities, milestones, dates, or deliverables.
- Budget changes.
- Change in recipient organization or key personnel.

Recipients should contact their assigned Grant Specialist in writing whenever a change requiring prior approval is necessary or if they are uncertain whether a project activity or cost requires prior approval. Failure to obtain prior approval may result in costs being deemed unallowable and request for grant funds being denied.

Project Management

Recipients are responsible for the overall management of the project, ensuring all project activities are completed as identified in the Work Plan and follow program requirements and the Grant Agreement terms and conditions.

Eligible agricultural management practice implementations must occur on the Assessor Parcel Number(s) (APNs) identified in the approved SOW. Additionally, implementation must begin no later than December 31, 2019. Failure to implement management practice(s) on the APN(s) identified in the approved SOW prior to December 31, 2019, may result in all or any portion of the grant funding being withheld and/or termination of the Grant Agreement.

Project Updates

Recipients are required to maintain clear and consistent communication with OEFI regarding project progress during the Grant Agreement term. This includes:

- Notification of changes in cost share agreements (reference [Cost Share](#)).
- Notification of changes to implementation dates (reference [Scope of Work Revisions](#)).
- Notification of issues affecting the project progress (reference [Notification of Problems and Delays](#)).

Cost Share

Cost share can be in the form of matching funds or in-kind contributions. Matching funds refers to a dollar amount committed to the project from a source other than the HSP. An in-kind contribution is the estimated dollar value of any time, property, or supplies donated to a project. Cost share must be reasonable and consistent with costs paid for equivalent work on non-grant funded activities for comparable work in the labor market.

The Grant Agreement term is from August 1, 2019 to March 31, 2022 (two years and eight months).

For Recipients providing matching funds, documentation reflecting all expenses incurred to support the project must be submitted to OEFI with the invoices.

The Recipient is to notify the assigned Grant Specialist if the amount or activities covered by cost share have changed.

Allowable Costs

A cost is allowable if it is approved in the project budget, directly relates to the implementation of eligible agricultural management practices and is incurred solely to advance work under the Grant Agreement.

Unallowable Costs

A cost is unallowable if it does not comply with program requirements or other terms and conditions of the Grant Agreement. A cost is also unallowable if it is not contained in the approved scope of work and is not necessary and reasonable to implement the approved eligible agricultural management practices. Unallowable costs will not be counted toward a Recipient's required [Cost Share](#).

If a Recipient is uncertain whether a cost is allowable, they must contact their assigned Grant Specialist before the cost is incurred.

Scope of Work Revisions

SOW revisions are required when implementation dates or eligible agricultural management practices must be altered, especially if such changes affect the Recipient's ability to implement practices within each designated Project Year or complete implementation of the approved practices.

Requests for revisions must be made in writing to the assigned Grant Specialist and provide a detailed justification explaining the need for the change and how the proposed change benefits or enhances the project.

Notification of Problems and Delays

Recipients must immediately notify OEFI of any delays, problems, and/or adverse conditions that may materially affect the project. Examples include but are not limited to: inability to collect soil samples; inability to implement the approved eligible agricultural management practices according to specifications; and inability to implement the approved management practice(s) according to the work plan or work plan schedule.

In such cases, Recipients must contact their assigned Grant Specialist immediately for purposes of resolving such delays and/or problems.

Invoicing

Invoicing for Payment

Payment is based on the Standard Payment Rates for Eligible Agricultural Management Practices for 2019 HSP Incentives Program and reimbursed upon verification of the eligible agricultural management practices implemented in the approved SOW, consistent with requirements noted in [Appendix D](#). It may take up to 45 days from the date the invoice is approved for a check to be issued by the State Controller's Office on behalf of CDFA.

Recipients can email a scanned, legible copy of the signed invoice to their assigned Grant Specialist at cdfa.HSP_Tech@cdfa.ca.gov, or a hard copy can be mailed to:

California Department of Food and Agriculture
Office of Environmental Farming and Innovation (Healthy Soils Program)
1220 N Street
Sacramento, CA 95814

To receive payment, Recipients must notify their assigned Grant Specialist upon complete implementation of all management practices, to begin [Project Verification](#) for that Project Year. Invoices will be processed after project implementation has been verified.

When to Submit Invoices

OEFI initiates each invoice cycle by generating an electronic invoice template. Upon notification by Recipient of complete implementation of all eligible agricultural management practices for a given Project Year, OEFI emails Recipients an invoice template with the Grant Agreement Number, Project Title, Invoice Number, Project Budget per practice, Amount Requested, and Invoiced to Date entered. The invoice template provided by OEFI must be used; invoices generated or altered by the Recipient will not be accepted. Invoices are due no later than 30 calendar days following completion of the Project Year implementation.

Completing an Invoice

Recipient verifies the Amount Requested column on the invoice for each eligible agricultural management practice implemented, then completes, signs, dates, and returns the invoice to OEFI. The Recipient will also enter the amount of Matching Funds to Date, if applicable.

For detailed instructions on completing the CDFA invoice template, refer to [Appendix A](#).

Advance Payments

Recipients may be eligible to receive a one-time advance payment to cover anticipated project expenditures at the start of the project implementation during the first year. The advance payment may not exceed 25 percent of the total award and must be expended within a three-month period. The remaining funds will be allocated on a reimbursement basis. Requests must be submitted using the Advance Payment Request form provided by CDFA.

Advance Payment Requests Procedures

To ensure timely processing of an Advance Payment Request, Recipients must do the following:

- Estimate the advance amount needed for up to a three-month period;
- Complete an Advance Payment Request and justification (e.g., cash flow issues); and
- Submit the Advance Payment Request and justification to their assigned Grant Specialist no fewer than 45 days before the cost will be incurred.

Advance Payment Offset Invoice

Recipient follows the instructions for an Invoice. The invoice template automatically calculates the amount to be paid less the advance payment amount. The Grant Specialist

adjusts the 'Less Advance' amount each billing period until the advance is offset 100 percent by expenditures.

Final Invoices

Recipient follows the instructions for [Completing an Invoice](#), and ensures the invoice is marked "Final" indicating all payment obligations have been met and no further payments are due.

Final Invoices are due no later than 30 calendar days following the completion of the Project Year 3 implementation. Note, as with Project Year 1, payment will not be made until [Project Verification](#) has occurred.

Withholds

OEFI will issue a Withhold Payment Notification to delay payment of an invoice if there is an invoice discrepancy or error, unallowable costs claimed, or outstanding reports. The Withhold Payment Notification describes the reason for withholding payment and what actions, if any, are required to resolve the issues for withholding payment. Invoices are processed once all issues are resolved. A Withhold Payment Notification will not be sent for funds withheld pending closeout, see Withhold Pending Closeout below.

See [Appeal Process](#) for information regarding appealing a Withhold Payment Notification.

Withhold Pending Closeout

OEFI will withhold ten percent of the Grant Agreement award until approval of the Final Invoice (required at the end of Project Year 3) and/or resolution of any performance issues through Project Year 3. A Withhold Payment Notification will not be sent, and the ten percent withheld may not be appealed. The ten percent withholding will be released contingent upon approval of the Final Verification.

Soil Testing Requirements

Reporting Requirements

Recipients are required to submit reports on soil organic matter content for each APN/Field to CDFA at the following times:

- Prior to initial implementation of funded practices in Project Year 1 (2019).
- One year after initial implementation (2020): For Soil Management Practices and Grazing Lands Practices: Compost Application and Prescribed Grazing, Recipients are required to take soil sample(s) prior to implementation of practices in that project year. For all other practices, soil samples can be collected after practice implementation in that year.

- Two years after initial implementation (2021): For Soil Management Practices and Grazing Lands Practices: Compost Application and Prescribed Grazing, Recipients are required to take soil sample(s) prior to implementation of practices in that project year. For all other practices, soil samples can be collected after practice implementation in that year.
- Three years after initial implementation (2022): For Soil Management Practices and Grazing Lands Practices: Compost Application and Prescribed Grazing, Recipients are required to take soil sample(s) prior to implementation of practices in that project year. For all other practices, soil samples can be collected after practice implementation in that year.

A laboratory report of soil organic matter content for each APN/Field can come from any of the accredited soil laboratories recommended by CDFA¹.

Compliance

Project Verification

HSP Incentives Program projects are subject to a minimum of one Project Verification for each Project Year. Project Verification will be conducted by CDFA or a third-party CDFA-appointed entity who will conduct field evaluations by APN to verify program compliance during the Grant Agreement term.

Verification will ensure that the eligible agricultural management practices have been implemented according to the SOW and in a manner consistent with the USDA NRCS CPS guidelines and/or CDFA Compost Application White Paper. Additionally, it will determine whether and when deliverables are being met and evaluate project progress to ensure the management practice(s) are completed within the Grant Agreement term. Recipients may be required to submit project related documentation (such as photos, receipts for payment of services/goods) to ensure HSP Incentives Program funds are used in compliance with the Grant Agreement terms and conditions.

Recipients must notify CDFA when implementation has been completed for each Project Year to initiate the Project Verification process. Yearly verification should be requested by the Recipient when all management practices have been implemented in Project Year 1, 2 and 3. The Final Verification must be completed by March 31, 2022.

¹ CDFA recommends the laboratories listed at the following websites for tests conducted for the 2018 Healthy Soils Program:

- Selected Plant and Soil Laboratories in Northern and Central California: <http://cesonoma.ucanr.edu/files/27431.pdf>
UC Cooperative Extension el Dorado County List of Laboratories for Tissue/Soil/Water Agricultural Analysis: <http://cecentralsierra.ucanr.org/files/115331.pdf>.
- UC ANR Soils Testing Laboratories for Home Gardeners: <http://ccmg.ucanr.edu/files/51308.pdf>.
- Selected Plant and Soil Testing Laboratories in Central and Southern California: http://ceventura.ucanr.edu/Com_Ag/Subtropical/Avocado_Handbook/Resources/Plant_Disease_Diagnostics_and_Soil_Testing_Labs_in_California-1999/

Consistent with the [CCI Funding Guidelines for Administering Agencies \(2018\)](#), and [Bond Accountability](#) requirements for Prop 68, the State of California has the right to review project documents and conduct audits during project implementation and over the project life.

Termination of Grant Agreement

CDFA may terminate a Grant Agreement for noncompliance. The Recipient will be notified in writing of the reasons for termination, the date the termination is effective, and the method for appealing the termination.

Appeal Process

Actions that may be appealed include but are not limited to:

- Withhold Payment Notification;
- Termination of Grant Agreement

Appeals must be in writing either emailed to: CDFA.LegalOffice@cdfa.ca.gov

Or via mail to:

California Department of Food and Agriculture
Legal Hearing and Appeals Office
1220 N Street
Sacramento, CA 95814

The appeal must include a copy of the notification or the name of the Recipient organization, the project number, the title of the project, the reasons the action should not be imposed, including any documentation to support the appeal, and the signature of the authorized representative. Appeals must be postmarked (date stamped if via email) within 10 business days of the notice of action from OEFI.

Appeals not received within this timeframe will be denied.

The action specified in the notification remains in effect while the appeal is under review.

Closeout

Before the Grant Agreement is closed, OEFI will review the Final Verification Report and verify resolution of any project performance concerns. A closeout letter will be issued when closeout review is completed.

Note: Close-out does not cancel record retention, financial accountability, or post-project requirements.

Record Retention

Recipients must retain invoices, project records, and any other relevant supporting documents for a period of three years from the date of the close-out letter.

Post-Project Requirements

Recipients are required to maintain implementation of practices incentivized through the HSP Incentives Program for a minimum of three years from the date of the close out letter. However, benefits from implementation of practices are expected to be achieved in the long term. Recipients have a continued expectation to expand these practices on their operations to achieve long-term benefits. Additionally, Recipients are required to maintain documentation related to their HSP funded projects, including records documenting maintenance of the agricultural management practice(s) and any soil testing reports for the project APNs, to report actual benefits achieved for three years after the project close out.

Critical Project Review

Grant recipients must agree to a Critical Project Review and audit during the project term to verify project progress. If it is determined by CDFA from the Critical Project Review that at that time the grant project is not meeting and is unlikely to meet certain milestones, CDFA has the right to terminate the Grant. Termination may result in forfeiture by the grantee of any funds retained pursuant to 10 percent retention policy. Critical Project Review may be completed through an auditing process.

Appendix A: CDFA Invoice Template

Bill to:
 CA DEPARTMENT FOOD & AGRICULTURE
 1220 N STREET
 SACRAMENTO, CA 95814

EXAMPLE

Recipient must complete all yellow shaded sections below.

INVOICE

Heathy Soil Incentives Program

Make Check Payable to:
ABC Farms, Inc
 Address
 City, State, Zip
 Attn: xxx

Grant Agreement Number: 18-xxxx-000-HS Billing Period: Jan 2020 – Dec 2020 Invoice Date: 28 Dec 2020 Invoice Number: 18-xxxx-000-HS-1
Month/Year to Month/Year

Recipients Name: ABC Farms, Inc Project Title: ABC Farming improvements

1	Grant Budget	8	Invoiced to Date	4	Yr 1 Amount Requested	7	Remaining Balance
	1. Soil Management Practices \$ 36,750.00		\$ -		\$ 18,375.00		\$ 18,375.00
	2. Cropland to Herbaceous Cover Practices \$ -		\$ -		\$ -		\$ -
	3. Establishment of Woody cover Practices \$ 8,316.00		\$ -		\$ 8,316.00		\$ -
	4. Soil Organic Matter Analysis \$ 300.00		\$ -		\$ 150.00		\$ 150.00
	Totals: \$ 45,366.00		\$ -		\$ 26,841.00		\$ 18,525.00
		5	Less Advance Payment:		0.00		
	9	Matching Funds to Date:			\$14,000.00		
		6	Amount to be Paid:		\$ 26,841.00		

10 I certify the amount requested is for actual and allowable expenditures incurred for HSP Incentives Program activities performed in accordance with CDFA Grant Agreement provisions.

PREPARER'S NAME & SIGNATURE	PHONE NUMBER	E-MAIL ADDRESS	DATE
AUTHORIZED NAME & SIGNATURE	PHONE NUMBER	E-MAIL ADDRESS	DATE

FOR STATE USE ONLY

\$	2020-21				
AMOUNT	STATE FISCAL YEAR	GRANT SPECIALIST INITIALS AND DATE	ACCOUNT CODE	PROGRAM CODE	SUPPLIER ID
	X				
CDFA AUTHORIZED APPROVER	CDFA AUTHORIZED SIGNATURE	DATE	OBJECT CODE	PRGM COST ACCT (PCN)	VENDOR ID

Liquidate against Advance payment.
 Withhold 10% of Grant Award until Project is verified.
 Project verified. Final payment.

CDFA Invoice Template Instructions and Definitions

Recipients must complete all yellow shaded sections identified on the CDFA invoice template. The following provides definitions and instructions on completing specific sections of the CDFA invoice template to request reimbursement payments for costs incurred to implement the project. For questions regarding and assistance with completing this template, Recipients should contact their assigned Grant Specialist.

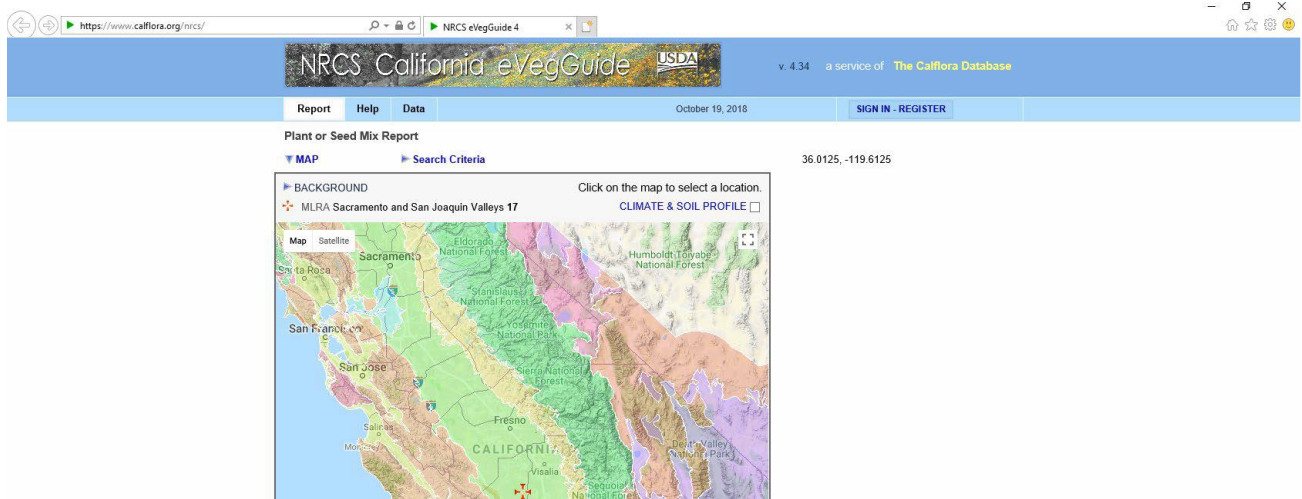
- **Grant Budget:** The total grant award amount for each budget category as identified in the approved Budget. Reimbursement for project expenditures is based on these categories and amounts.
- **Billing Period:** The yearly period in which project costs were incurred. For example, if project costs were incurred during the first billing year, the billing period is August 2019 – June 2020.
- **Invoice date:** The date Recipient completes and signs the CDFA Invoice template.
- **Amount Requested:** Review the dollar amounts in each budget category to request reimbursement for project costs that were incurred during the billing period. The amount requested in each budget category cannot exceed the total amounts listed under the “Grant Budget” or the yearly amount detailed in the Scope of Work section of the Grant Agreement under the Attachment 1a - Budget Details.
- **Less Remaining Advance:** If Advance Payment was requested, OEFI will adjust the “Less Remaining Advance” amount based on approved advance payment. The invoice template will automatically calculate the “Amount to be Paid” less the “Advance Payment.”
- **Amount to be Paid:** The total payment amount requested for project costs that were incurred during a billing period. The invoice template will automatically calculate this total. Once OEFI approves the invoice, the “Amount to be Paid” will be the amount issued for reimbursement.
- **Remaining Balance:** The amount of grant funding remaining that has not been paid. OEFI will not approve an invoice with negative balances in this column. Contact your assigned Grant Specialist if a budget revision is needed.
- **Invoiced to Date:** The total project cost amount reimbursed for each budget category based on previously approved invoices. OEFI will adjust the “Invoiced to Date” amount each billing period.
- **Matching Funds to Date:** Input the total matching funds and/or in-kind contributions contributed by Recipient to implement the project.
- **Preparer/Authorized Signatures:** An authorized representative of the agriculture operation (Recipient) must print their name and sign on the “Authorized signature” line to certify the amount requested for each billing period. If the invoice was

prepared on behalf of the Recipient, the preparer should print their name and sign on the "Preparer's signature" line. OEFI will not approve invoices without the Recipient signing as the "Authorized signature."

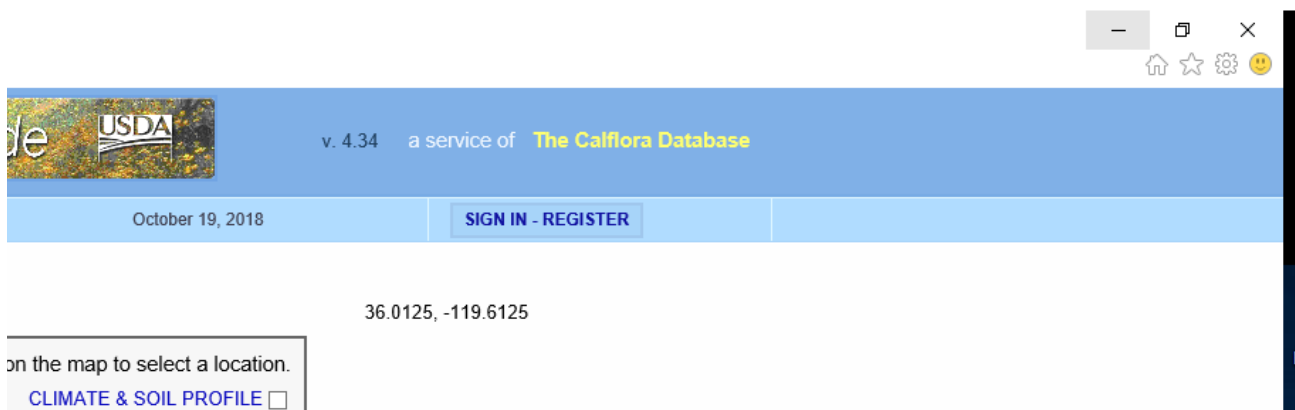
Appendix B

Instructions to use NRCS California eVegGuide – Selecting Species for Planting

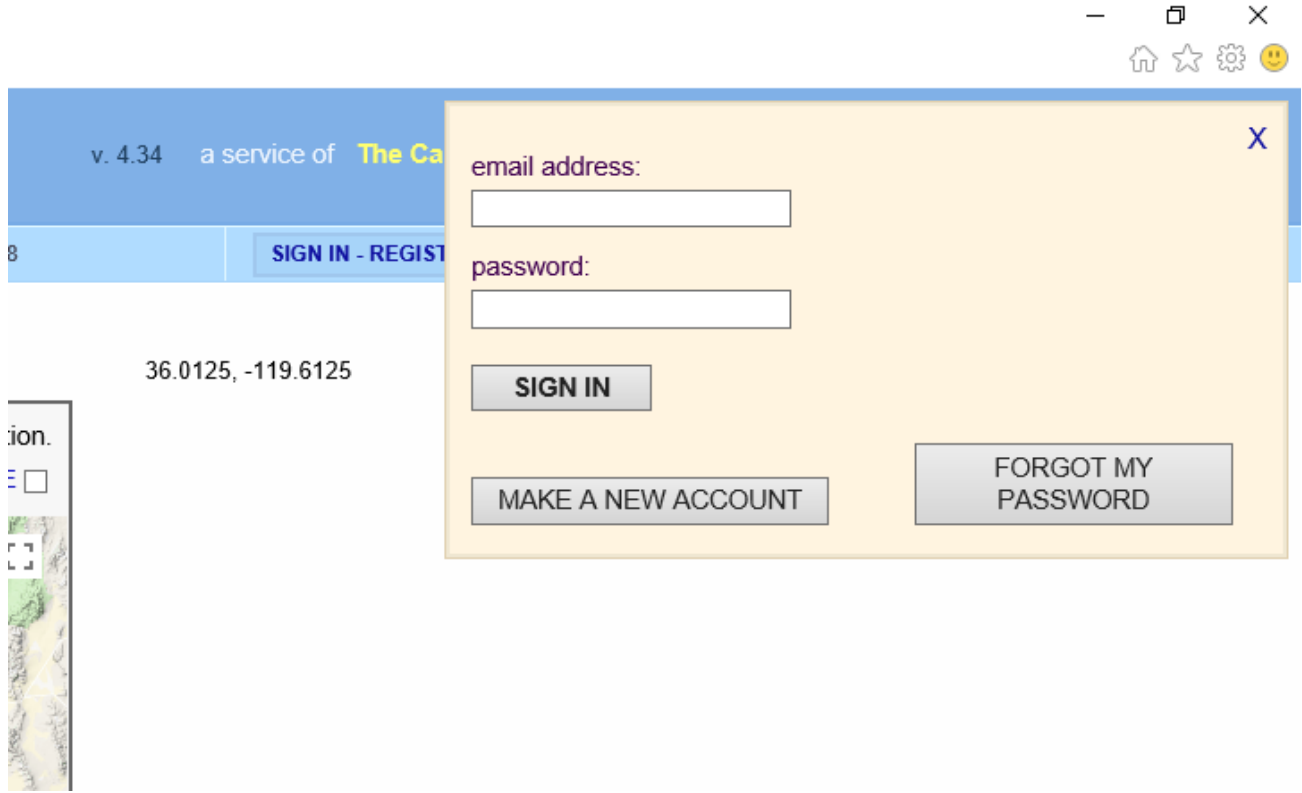
Step 1: Go to the USDA NRCS California eVegGuide website at <https://www.calflora.org/nrcs/> as shown below.



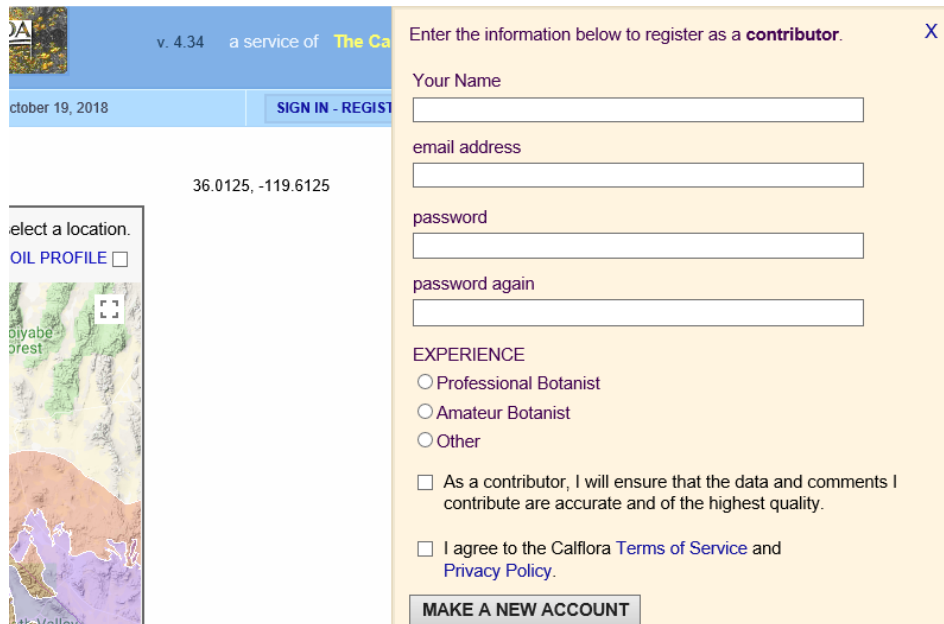
Step 2: Click on the “SIGN IN – REGISTER” link (upper right corner) to create user account.



Step 3: Select “MAKE A NEW ACCOUNT” link shown below.



Step 4: Fill out information boxes to create user profile account.



Step 5: Use mouse cursor to select location (location agricultural practice is to be implemented) on the map. **Note:** area selected on map is denoted by red cross.

The screenshot shows a web browser window with two tabs: "Calflora - Search for Plants" and "NRCS eVegGuide 4". The page header features the "NRCS California eVegGuide" logo with the USDA logo, version "v. 4.34", and "a service of The Calflora Database". Navigation tabs include "Report", "Help", and "Data". The date "October 19, 2018" and the name "drew whitaker" are visible. A button labeled "EDIT - SIGN OUT" is present. The main content area is titled "Plant or Seed Mix Report" and includes a "MAP" tab and a "Search Criteria" link. A map of the Sacramento and San Joaquin Valleys is displayed, showing various counties and cities. A red cross is placed on the map, indicating a selected location. The map includes a "BACKGROUND" section with "MLRA Sacramento and San Joaquin Valleys 17" selected and a "CLIMATE & SOIL PROFILE" link. The map also has a "Click on the map to select a location." instruction and a "Map" tab with a "Satellite" option.

Step 6: Select "Search Criteria" link.

This screenshot is similar to the previous one, showing the same web browser window and page header. The "Search Criteria" link is now highlighted, indicating it has been selected. The map area is partially visible, showing the same region as before. The "BACKGROUND" section still shows "MLRA Sacramento and San Joaquin Valleys 17" selected, and the "CLIMATE & SOIL PROFILE" link is still present. The "Click on the map to select a location." instruction is also visible.

Step 7: Choose appropriate agronomic “Practice” to be implemented. **Note:** Cover crop was selected for this example.

The screenshot shows the NRCS California eVegGuide interface. The browser tabs include 'index.html?', 'Calflora - Search for Plants', and 'NRCS eVegGuide 4'. The header features the 'NRCS California eVegGuide' logo with the USDA emblem, version 'v. 4.34', and 'a service of The Calflora Database'. The navigation bar includes 'Report', 'Help', and 'Data' tabs, along with the date 'October 19, 2018', the user 'drew whitaker', and an 'EDIT - SIGN OUT' button. The main content area is titled 'Plant or Seed Mix Report' and includes a 'MAP' link and 'Search Criteria' with coordinates '38.6356, -121.671'. The search criteria form has a 'Practice' dropdown set to '340 - Cover Crop' and a 'Purpose' dropdown set to 'any'. Under 'Plant Type', there are checkboxes for 'Cereal Grain', 'Forb', 'Legume', 'Grass or Grass-like', 'Shrub', and 'Tree'. There are also checkboxes for 'Pollinator Habitat' and 'Native'. 'CLEAR' and 'SEARCH' buttons are at the bottom right. Below the form are links for 'Select plants' and 'Select a mix'.

Step 8: Choose “Purpose” dropdown box and “Plant Type” check box. **Note:** for this example, Nitrogen fixation, Legume, and Pollinator Habitat were selected. Select “Search” to bring up a tabulated list of legume cover crops to be used for Nitrogen fixation and Pollinator Habitat based on your location.

The screenshot shows the NRCS California eVegGuide interface with updated search criteria. The browser tabs include 'nt_type=Legume', 'comet-planner-cdfahsp.com', and 'NRCS eVegGuide 4'. The header and navigation bar are identical to the previous screenshot. The main content area is titled 'Plant or Seed Mix Report' and includes a 'MAP' link and 'Search Criteria' with coordinates '38.6561, -121.6544'. The search criteria form has a 'Practice' dropdown set to '340 - Cover Crop' and a 'Purpose' dropdown set to '3 - Nitrogen Fixation'. Under 'Plant Type', the 'Legume' checkbox is checked. The 'Pollinator Habitat' checkbox is also checked. The 'Native' checkbox remains unchecked. 'CLEAR' and 'SEARCH' buttons are at the bottom right. Below the form are links for 'Select plants', 'Select a mix', and a 'Plant Practice Search' link.

Step 9: The tabulated list provides information (Common Name, Scientific Name, Growth Cycle, Plant Type, Planting Rate, etc.) for individual cover crops that can be used based on your location for Nitrogen Fixation and Pollinator Habitat.

Practice: 340 - Cover Crop Purpose: 3 - Nitrogen Fixation

Plant Type: Cereal Grain Forb Legume Grass or Grass-like Shrub Tree

Pollinator Habitat: Native:

Buttons: CLEAR, SEARCH

Instructions: To include a plant in the final report, click on Percent, and specify a percentage. LBS: PLS pounds / acre at 100%

Percent	Common Name	Scientific Name	Resident Status	Growth Cycle	Plant Type	Bloom	Drilled LBS	Broadcast LBS	Spacing feet	Ease Rating	Notes
0 %	Sunn hemp	Crotalaria juncea	introduced	Annual	Legume		40	80		easy	34 33 36 30
0 %	Small-flowered lupine	Lupinus bicolor	native	Annual	Legume	Mar-Jun	14.5	29		easy	29 35 37 2 31
0 %	Annual yellow sweetclover	Melilotus indicus	introduced	Annual	Legume	May-Aug	10	20		easy	29 11 33 37 36 13 31
0 %	Annual white sweetclover	Melilotus officinalis	introduced	Annual	Legume	May-Sep	10	20	4	easy	29 12 33 37 36 13 31

Step 10: In the tabulated list, select the legumes that will be used in the cover crop practice. For this example, 50% of the cover crop will be “Sunn Hemp” and 50% will be “Small-flowered lupin”. Select “FINAL REPORT” to calculate the appropriate planting/seeding rate based off the 50/50 mixture ratio.

Buttons: CLEAR, SEARCH, FINAL REPORT

Instructions: To include a plant in the final report, click on Percent, and specify a percentage. LBS: PLS pounds / acre at 100%

Percent	Common Name	Scientific Name	Resident Status	Growth Cycle	Plant Type	Bloom	Drilled LBS	Broadcast LBS	Spacing feet	Ease Rating	Notes
50 %	Sunn hemp	Crotalaria juncea	introduced	Annual	Legume		40	80		easy	34 33 36 30
50 %	Small-flowered lupine	Lupinus bicolor	native	Annual	Legume	Mar-Jun	14.5	29		easy	29 35 37 2 31

Step 11: Approved pre-mixed bags of seed may also be used by selecting “Select a mix” and then choosing the pre-mixed seed.

[Select plants](#) [Select a mix](#) [Plant Practice Search](#) [FINAL REPORT](#)

To select a seed mix for the final report, check the checkbox.
Click on the **NAME** link to see components.

15 results

Select	ID	Name	Description	Resident	Ease Rating
<input checked="" type="checkbox"/>	1833	Reseeding Annual Clover Mix for Orchards	Seeding rate: drilled - 25 lb/ac, broadcast - 45 lb/ac	introduced	easy
<input type="checkbox"/>	20	Napa Vineyards: Hillside Quick Erosion Control Soil Builder Mix (formerly NAPA2 mixture).	Seeding rate: drilled - 90 lb/ac, broadcast - 158 lb/ac	introduced	easy
<input type="checkbox"/>	1662	Cover Crop, SoilMax Legume Mix	Applicable to: all Area 2 MLRA's and 4ETa zones. Seeding rate: drilled - 135 lb/ac, broadcast - 235 lb/ac	both	easy
<input type="checkbox"/>	1665	Cover Crop, Bee Forage Mixture 2	Applicable to: all Area 2 MLRA's and 4ETa zones. Seeding rate: drilled - 18 lb/ac, broadcast - 32 lb/ac	introduced	easy

Step 12: Select “FINAL REPORT” to calculate the appropriate planting/seeding rate of the pre-mixed seed.

[MAP](#) [Search Criteria](#) 38.6356, -121.671

Practice: Purpose:

Plant Type: Cereal Grain Forb Legume Grass or Grass-like Shrub Tree

Pollinator Habitat: Native:

[CLEAR](#) [SEARCH](#)

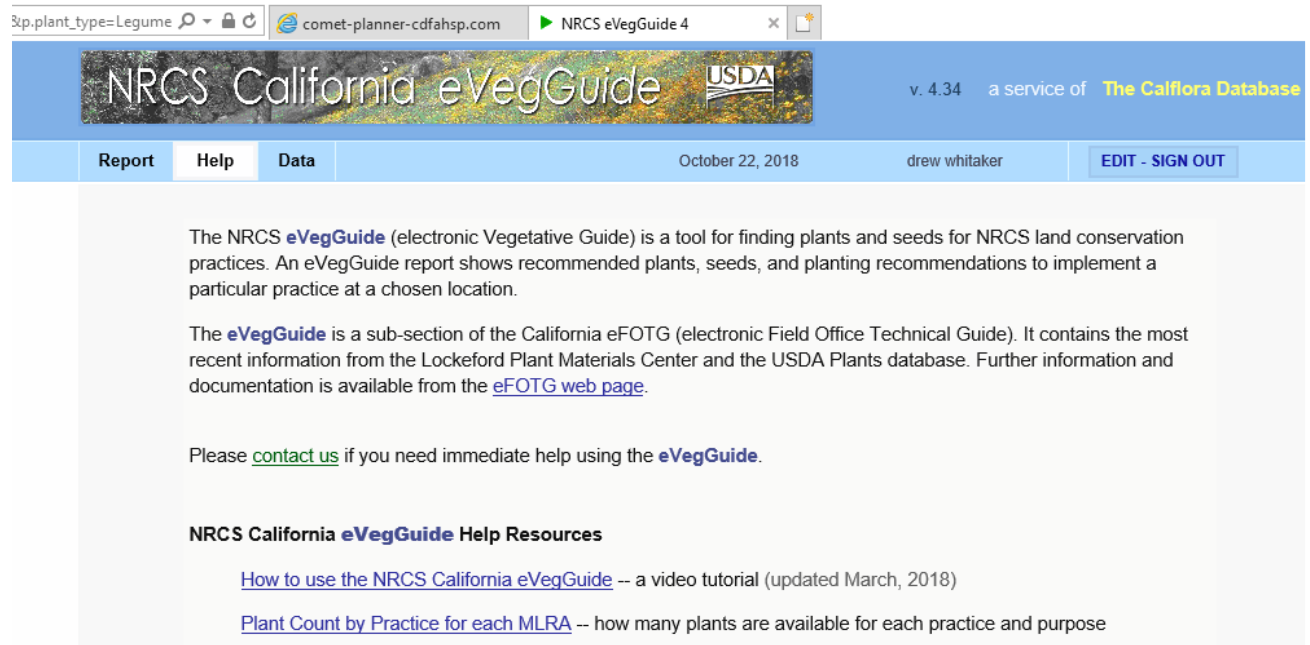
[Select plants](#) [Select a mix](#) [Plant Practice Search](#)

[Final Report](#) [GENERATE CSV DOCUMENT](#) [GENERATE RTF DOCUMENT](#)

3 results Click on [Scientific Name](#) for more information. LBS: PLS pounds / acre

Percent	Common Name	Scientific Name	Resident Status	Growth Cycle	Plant Type	Bloom	Drilled LBS	Broadcast LBS	Spacing feet	Ease Rating	Notes
40.0 %	Subterranean clover	Trifolium subterraneum	introduced	Annual	Legume	Jan-Feb	10.0	20.0		easy	26 37 33 36 31 40
30.0 %	Rose clover	Trifolium hirtum	introduced	Annual	Legume	Feb-Mar	2.0	4.0		easy	3 26 37 33 31 40
30.0 %	Crimson clover	Trifolium incarnatum	introduced	Annual	Legume	Feb-Apr	2.2	4.4		easy	26 37 33 31
Total							14.2	28.4			

Note: More information about the USDA NRCS California eVegGuide website is available under the “Help” tab.



The screenshot shows a web browser window with the URL `http://plant_type=Legume` and the domain `comet-planner-cdfahsp.com`. The page title is "NRCS eVegGuide 4". The website header features the "NRCS California eVegGuide" logo with the USDA logo, version "v. 4.34", and "a service of The California Database". The navigation menu includes "Report", "Help", and "Data". The user is logged in as "drew whitaker" on "October 22, 2018", with an "EDIT - SIGN OUT" button.

The main content area contains the following text:

The NRCS **eVegGuide** (electronic Vegetative Guide) is a tool for finding plants and seeds for NRCS land conservation practices. An eVegGuide report shows recommended plants, seeds, and planting recommendations to implement a particular practice at a chosen location.

The **eVegGuide** is a sub-section of the California eFOTG (electronic Field Office Technical Guide). It contains the most recent information from the Lockeford Plant Materials Center and the USDA Plants database. Further information and documentation is available from the [eFOTG web page](#).

Please [contact us](#) if you need immediate help using the **eVegGuide**.

NRCS California eVegGuide Help Resources

- [How to use the NRCS California eVegGuide](#) -- a video tutorial (updated March, 2018)
- [Plant Count by Practice for each MLRA](#) -- how many plants are available for each practice and purpose

Appendix C

Soil Sampling Protocol for Soil Organic Matter Analysis

WHAT DO I NEED?

Bring the following materials with you when heading to the field for soil sampling.

As shown in Figure 1, these materials include:

1. Two buckets (one for sample and one for supplies)
2. Soil sample bags: one-gallon freezer storage bags (or soil sample bags); one bag per sample
3. One clipboard and papers for recording
4. Permanent marker and/or pen
5. A soil probe or straight shovel (sharpshooter or drain spade style).
6. Ice pack(s) (**optional**, needed for hot days when samples for nitrogen content or biological properties.)



Figure 1. Materials needed for soil sampling.

WHERE TO SAMPLE?

Determining the number of samples to be taken from each field (or APN)

Decide whether one sample will adequately represent the field (or APN), or whether an APN should be split to into multiple sampling units. A field is not the same and may vary in soil type, fertility, or cropping and management histories. Divide the field into different sampling units and make sure conditions inside the same sampling unit are as uniform as possible. If a uniform field is very large, you may need to divide it into several sampling units so as each sampling unit is no larger than 20 acres. One soil sample is needed from each unit. Inside a sampling unit, a composite soil sample is taken.

1. Identify locations within the unit where soil samples are representative.
2. Borders and irregular areas should be avoided, unless a sample is specifically being collected from those areas to identify constraints.
3. As shown in Figure 2, one soil core from each location. Total 14 cores will be taken mixed in bucket to make a composite soil sample to represent the sampling unit.
4. For a sampling unit, about 10 -20 locations should be selected to make a composite sample.

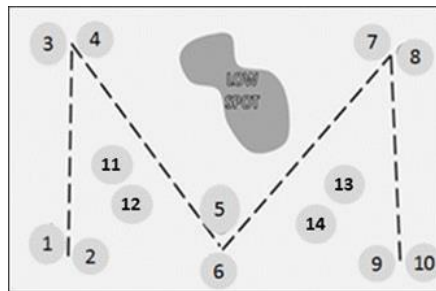


Figure 2. Locations where samples should be taken within a sampling unit.

HOW TO TAKE A COMPOSITE SOIL SAMPLE?

Two important requirements must be met when taking soil samples:

1. A uniform slice of soil from the soil surface to a desired depth must be taken.
2. The same volume of soil must be collected from each sample location.

Determining Depth for Sampling:

Depth to take soil samples is usually determined by the crop, what you are interested to know, and your knowledge about the soil profile. For soil organic matter content for the purpose of the 2018 CDFA Healthy Soils Program, sampling depth should be from surface to 8" deep.

Taking Samples with a Soil Probe (Figure 3)

1. Remove surface debris (A).
2. Push probe steady and straight to the desired depth (e.g., 8" in a tomato field) (B).
3. Remove the core and place it in the clean bucket.
4. Go to the next location and repeat steps 1-3.
5. Finish sampling from all (ten or more) locations.

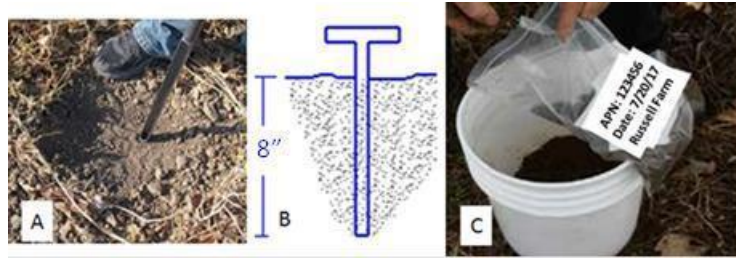


Figure 3. Taking samples with a soil probe.

6. Gently mix soils in the bucket and collect them in the sample bag labeled with the APN, sampling date, and farm name (C).

Taking Samples with a Shovel or Spade (Figure 4)

1. Remove surface debris (A).
2. Use the spade to dig a small hole about 8" deep. From the side of the hole, **take a vertical, rectangular slice of soil 8" deep and about 2" thick** (B).
3. Remove any extra soil to ensure that the sample is the same width at the top and bottom of the slice. It is important to collect the same amount of soil through the 6" sample profile so that it is not biased with more soil from the surface compared to the subsurface (C).
4. Place sample into a clean bucket.
5. Go to the next location and repeat the steps 1-4 for all locations.
6. Gently mix soils in the bucket and collect 6 cups of well-mixed soils (or no less than 1 lb.) into the sample bag labeled with the APN, sampling date, and farm name (D).



Figure 4. Taking samples with a shovel.

SAMPLE STORAGE AND SHIPPING TO A SOIL TESTING LABORATORY

Before you send your soil samples for analysis, ensure that the laboratory uses University of California test methods, which are test methods proven on California farms by the University. Contact the soil testing laboratory where you plan to send your samples.

CDFA recommends the laboratories listed at the following websites for tests conducted for the 2018 Healthy Soils Program:

- Selected Plant and Soil Laboratories in Northern and Central California: <http://cesonoma.ucanr.edu/files/27431.pdf>
- UC Cooperative Extension el Dorado County List of Laboratories for Tissue/Soil/Water Agricultural Analysis: <http://cecentralsierra.ucanr.org/files/115331.pdf>.
- UC ANR Soils Testing Laboratories for Home Gardeners: <http://ccmg.ucanr.edu/files/51308.pdf>.
- Selected Plant and Soil Testing Laboratories in Central and Southern California: http://ceventura.ucanr.edu/Com_Ag/Subtropical/Avocado_Handbook/Resources/Plant_Disease_Diagnostics_and_Soil_Testing_Labs_in_California-1999/

Please check with the laboratory where you intend to send samples to ensure if there are specific requirements regarding sample storage, packing and shipping.

Requirements may be different depending on what soil properties are to be tested.

Provided below are general guidelines regarding handling of soil samples:

- Ship your soil samples to a soil test laboratory as soon as possible.
- Ensure all sample bags are correctly labeled and sealed.
- Provide a soil sampling form together with samples in the shipping box.
- For tests on soil texture, organic matter content, pH, cation exchange capacity or mineral contents other than nitrogen, samples can be handled at room temperature.
- For tests on nitrogen content and/or biological properties (e.g. microorganisms), keep samples out of direct sunlight and store as cool as possible (ice packs recommended) during sampling and storage. Store samples in a refrigerator or cold room after returning from the field. Pack soil samples with ice packs when shipping.
- Contact the soil testing laboratory a few days after samples are shipped to check they were received and are being handled properly.

Soil Health Data

A. Required by CDFA

The cost of the following test is covered by the 2018 CDFA HSP Incentives Program funds during the project term.

- Soil organic matter content.

For the test to be conducted 2 and 3 years after the initial implementation of funded practice(s), matching funds will be provided by awardees to cover the cost of testing, if the testing period occurs outside of the project term, i.e., after March 31, 2022.

B. Optional data encouraged but not required by CDFA

The costs of the following tests are to be covered by matching funds provided by awardees during the full project term (i.e. 3 years).

Physical properties:

- Bulk density
- Surface hardness
- Subsurface hardness)
- Water infiltration
- Water holding capacity
- Aggregate stability
- Saturated hydraulic conductivity

Chemical Properties:

- pH
- Soil chemical composition

Biological properties:

- Active or labile carbon
- Soil protein
- Soil respiration
- Earthworms

References

Moebois-Clune B.N., D.J. Moebois-Clune, B.K. Gugino, O.J. Idowu, R.R. Schindelbeck, A.J. Ristow, H.M. van Es, J.E. Thies, H.A. Shayler, M.B. McBride, D.W. Wolfe, and G.S. Abawi. 2016. Soil sampling protocol. In Comprehensive Assessment of Soil Health. Soil and Crop Science Section, Cornell University. Ithaca, NY. P. 27-30.

USDA NRCS. 2007. Soil sampling for nutrient management.

https://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download?cid=nrcs144p2_051273&ext=pdf

UCCE UC Small Farm Program, 2017. Soil sampling.

http://sfp.ucdavis.edu/pubs/Family_Farm_Series/Veg/Fertilizing/soil/

Appendix D

Payment Rates, Implementation Guidelines and Verification Requirements for 2018 HSP Incentives Program

HSP Agricultural Management Practice Name	Practice Implementation Name* (COMET -Planner)	Scenario Name*	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years of Payment
Conservation Crop Rotation (USDA NRCS CPS 328)	Decrease Fallow Frequency OR Add Perennial Crop to Rotations	Basic rotation	Effective implementation of a conservation crop rotation to provide high residue and/or perennial crops.	(1) check if rotation practices followed the plan and (2) the acreage	\$19.62/Ac	3

		Specialty crops	Effective implementation of a rotation of organic or non-organic specialty crops (fruits & vegetables).	(1) check if rotation practices followed the plan and (2) the acreage	\$52.34/Ac	3
Residue and Tillage Management, No-Till (USDA NRCS CPS 329)	Intensive Till to No Till or Strip Till on Irrigated Cropland OR Non-Irrigated Cropland	No-Till or Strip-Till	(1) No tillage; (2) Planting method is no-till drilling or hand planting.	Any time of the year to look evidence of no soil disturbance	\$30.18/Ac	3
Cover Crop (USDA NRCS CPS 340)	Add Non-Legume Seasonal Cover Crop to Irrigated Cropland OR Non-Irrigated Cropland Add Legume Seasonal Cover	Cover Crop: Basic	Cover crop should be allowed to grow to produce as much biomass as possible without delaying planting of the following crop.	(1) Cover crop is visible in the field at verification. (2) Receipts of cover crop seeds purchased.	\$126.44/Ac	3

	Crop to Irrigated Cropland OR Non-Irrigated Cropland	Cover Crop: multiple species	Planting multi-species cover crop (two or more species) mix includes a small grain, a legume, and may include other species such as forage sorghum, radishes, buckwheat, etc..	(1) Mixed cover crop species are visible in the field at verification. (2) Receipts of cover crop seeds purchased.	\$147.00/Ac	3
Residue and Tillage Management, Reduced Till (USDA NRCS CPS 345)	Intensive Till to Reduced-Till on Irrigated Cropland OR Non-Irrigated Cropland	Reduced-Till	(1) Mulch or vertical tillage, chiseling or disking to limit soil disturbance, or (2) Fewer tillage operations.	Must meet depth, frequency or percent area of soil disturbance.	\$32.06/Ac	3
Residue and Tillage Management, Reduced Till (USDA NRCS CPS 345)	Intensive Till to Reduced-Till on Irrigated Cropland OR Non-Irrigated Cropland	Reduced-Till	(1) Mulch tillage, vertical tillage, chiseling or disking; (2) Fewer tillage operations.	Must meet depth, frequency or percent area of soil disturbance.	\$32.06/Ac	3

Mulching (USDA NRCS CPS 484)	Add High Carbon Mulch to Croplands	Natural Materials	1-3 inches thickness of straw or other natural materials	(1) \geq 60% soil surface covered; (2) Receipts of materials purchased.	\$385.70/Ac	3
		Wood Chips	2-3 inches thickness of wood chips	(1) Tree rows (\geq 4' radius) covered; (2) Receipts of wood chips purchased.	\$1712.14/Ac	3
Strip Cropping (USDA NRCS CPS 585)	Add Perennial Cover Grown in Strips with Irrigated Annual Crops OR Non- Irrigated Annual Crops	Wind and water erosion control	(1) Two or more strips are required; (2) \geq 50% vegetation cover must be perennial and erosion resistant crops.	(1) Number, width & length of strips; (2) species (perennial and erosion resistant)	\$2.64/Ac	1

<p>Nutrient Management (USDA NRCS CPS 590)</p>	<p>Improved N Fertilizer Management on Irrigated Cropland OR Non-Irrigated Cropland – Reduce Fertilizer Application Rate by 15%</p>	<p>Basic NM</p>	<p>A nutrient management budget will be developed for each field(s) based on soil test analysis and university of California recommendation rates or crop removal rates.</p>	<p>Receipts and farm log of nitrogen fertilizers showing application rates is 15% less than what was used in the past 3 years or UC recommended rates.</p>	<p>\$14.26/Ac</p>	<p>3</p>
<p>Conservation Cover ((USDA NRCS CPS 327)</p>	<p>Convert Irrigated Cropland to Permanent Unfertilized Grass Cover or Grass/Legume Cover OR Convert Non-Irrigated Cropland to Permanent Unfertilized Grass Cover or Grass/Legume Cover</p>	<p>Introduced species</p>	<p>Introduced cool season perennial grass to reduce soil erosion, runoff and dust emissions.</p>	<p>(1) Receipts of seeds purchased; (2) species; (3) good growth</p>	<p>\$203.16/Ac</p>	<p>1</p>
		<p>Introduced species with foregone income</p>	<p>Introduced, cool season perennial grass for organically managed lands.</p>	<p>(1) Receipts of seeds purchased; (2) species; (3) good growth; (4) Previous cropland used</p>	<p>\$607.74/Ac</p>	<p>1</p>

		Monarch species - mix	(1) Mix of native grass and forbs for specialized purposes (wildlife, pollinators or ecosystem restoration); (2) Species not readily available and/or difficult to produce.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$2,222.26/Ac	1
		Monarch species - mix with foregone income	A mix of native grass and forbs for specialized purposes; Species not readily available and/or difficult to produce.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$2,465.00/Ac	1
		Native species	Mixture of native and warm season perennial grass to reduce soil erosion, water/sediment runoff and dust emissions.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$280.74/Ac	1

		Native species with foregone income	Mixture of native & warm season perennial grass.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$701.98/Ac	1
		Pollinator species	Permanent vegetation, including a mix of native grasses, legumes, and forbs to provide habitat for pollinators.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$1,571.88/Ac	1
		Pollinator species with foregone income	Permanent vegetation, including a mix of native grasses, legumes, and forbs to provide habitat for pollinators.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$1,993.12/Ac	1

Contour Buffer Strips (USDA NRCS CPS 332)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR Unfertilized Grass/Legume Cover	Introduced Species, Foregone Income	(1) Introduced cool season perennial grass; (2) Area of strips is taken out of production.	(1) Visible: cool season perennial grass in previous cropland. (2) Receipts of seeds purchased.	\$620.10/Ac	1
		Native Species, Foregone Income	(1) Native warm season perennial grass; (2) Area of strips is taken out of production.	(1) Visible: warm season perennial grass in previous cropland. (2) Receipts of seeds purchased.	\$615.08/Ac	1
		Wildlife Pollinator, Foregone Income	(1) Three or more native warm season perennial that are pollinator friendly species; (2) Area of strips is taken out of production.	(1) Visible: ≥ 3 species of native, warm season, pollinator friendly, perennials species. (2) Receipts of seeds purchased.	\$832.26/Ac	1

Field Border (USDA NRCS CPS 386)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR Permanent Unfertilized Grass/Legume Cover	Field Border, Introduced Species	(1) Introduced, cool season perennial grass; (2) Around the perimeter of a crop/rangeland.	(1) Visible: cool season perennial grass. (2) Receipts of seeds purchased.	\$136.64/Ac	1
		Field Border, Native Species	Untreated, warm season, native perennial around the perimeter of an agricultural land.	(1) Visible: warm season, native perennials. (2) Receipts of seeds purchased.	\$184.88/Ac	1
		Field Border, Pollinator	Mixed species, native Forb around perimeter of agricultural lands.	(1) Visible: mixed, native forbs. (2) Receipts of seeds purchased.	\$1,510.22/Ac	1

Filter Strip (USDA NRCS CPS 393)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR to Permanent Unfertilized Grass/Legume Cover	Filter Strip, Native species	Native, warm season perennial grass	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of seeds purchased.	\$248.54/Ac	1
		Filter Strip, Introduced species	Introduced, cool season perennial grass and/or legume mix		\$268.16/Ac	1
Forage and Biomass Planting (USDA NRCS CPS 512)	Conversion of Annual Cropland to Irrigated Grass/Legume Forage/Biomass Crops OR Conversion of	Nonnative high seeding rate, no lime	(1) Seeding rate: ≥ 30 lb/acre PLS (pure live seed); (2) Planting method: No- Till/grass drill.	(1) Receipts of seeds purchased; (2) species; (3) good growth	\$313.28/Ac	1

Annual Cropland to Non-Irrigated Grass/Legume Forage/Biomass Crops	Nonnative standard seeding rate, no fertilizer	(1) Seeding rate: ≥ 9 lb/acre PLS (pure live seed); (2) Planting method: No-Till/grass drill	(1) Receipts of seeds purchased; (2) species; (3) good growth	\$152.00/Ac	1
	Nonnative standard seeding rate with fertilizer	(1) Seeding rate: ≥ 9 lb/acre PLS (pure live seed); (2) Planting method: No-Till/grass drill	(1) Receipts of seeds purchased; (2) species; (3) good growth	\$218.50/Ac	1
	Non-native high seeding rate, lime	(1) Seeding rate is ≥ 30 lb/acre PLS (pure live seed); (2) No-Till/grass drill is used to seed.	(1) Receipts of seeds purchased (2) species; (3) good growth	\$428.20/Ac	1

Grassed Waterway (USDA NRCS CPS 412)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass/Legume Cover OR Convert Strips of Non-Irrigated Cropland to Permanent Unfertilized Grass /Legume Cover	Base Waterway	Waterways area measured from top of bank to top of bank. Typical practice is 1200' long, 12' bottom, 8:1 side slopes, and 1.5' depth.	(1) Success of grassed waterway with suitable vegetation; (2) Receipts of materials purchased.	\$2,164.42/Ac	1
		Base waterway with checks	Area measured from top of bank to top of bank. Fabric or stone checks installed every 100 feet along the waterway perpendicular to waterflow and 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. Fabric Checks are installed 18" deep with 12"	(1) Success of grassed waterway with suitable vegetation; (2) Receipts of materials purchased.	\$3,372.00/Ac	1

			laid over on the surface.			
Herbaceous Wind Barriers (USDA NRCS CPS 603)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR to Permanent Unfertilized Grass/Legume Cover	Cool Season Perennial Species	Width of the Herbaceous Wind Barrier must be at least 2 feet.	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of seeds purchased.	\$0.14/Ft	1
Riparian Herbaceous Cover (USDA NRCS CPS 390)	Convert Irrigated Cropland to Permanent Unfertilized Grass Cover Near Aquatic Habitats; OR Convert Irrigated	Broadcast Seeding with Foregone Income	(1) Area is removed from crop production; (2) Six species mix, native Forb; (3) Existing plant community is disturbed.	(1) Visible: six or more native, pollinator friendly perennial species planted; (2) Receipts of seeds purchased.	\$3,481.40/Ac	1

Cropland to Permanent Unfertilized Grass/Legume Cover Near Aquatic Habitats	Plug Planting with Foregone income	(1) Area is removed from crop production; (2) Native aquatic plants, emergent or submerged.	(1) Visible: native, aquatic perennial species plug planted; (2) Receipts of seedlings purchased.	\$40,689.76/Ac	1
	Combination Broadcast Seeding and Plug Planting with Foregone Income	(1) Area is removed from crop production; (2) One species native forb and native aquatic plants, emergent or submerged.	(1) Visible: native, aquatic perennial species planted; (2) Receipts of seedlings & seeds purchased.	\$21,662.22/Ac	1
	Pollinator Cover with Foregone Income	(1) Area is removed from crop production; (2) 2-12 native forbs that bloom sequentially during the growing season and at least 2 species in bloom at any given time during the growing season.	(1) Visible: ≥ 4 native forbs bloom at different times in growing season planted in area of previous cropland. (2) Receipts of seedlings & seeds purchased.	\$4,764.60/Ac	1

Vegetative Barrier (USDA NRCS CPS 601)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass/Legume Cover	Seeded Barrier	A strip or strips of stiff, dense vegetation is established by seeding with width \geq 3 feet.	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of seeds purchased.	\$0.02/Ft	1
		Vegetative Planting	Permanent strips of stiff, dense vegetation established along the general contour of slopes with width \geq 3 feet.	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of sprigs purchased.	\$11.34/Ft	1
Alley Cropping (USDA NRCS CPS 311)	Replace 20% of Annual Cropland with Woody Plants	Tree-planting, single row	(1) Potted or balled and burlapped hardwood tree size: 2-3 gal.	(1) Receipts of seedlings purchased; (2) species, (3) number of live plants	\$33.26/Ea	1

Hedgerow Planting (USDA NRCS CPS 422)	Replace a Strip of Cropland with 1 Row of Woody Plants	Single Row	(1) Inclusion of pollinator-friendly shrubs and perennial wildflowers; (2) Combination of cool and warm season perennial species; (3) ≥ 200 plants/acre; (2) Row width ≥ 8 feet; (3) Average height ≥ 3 feet at maturity; (4) Planting protection.	(1) Visible: ≥ 200 live tree/shrubs plants/acre. (2) Receipts of seedlings purchased.	\$8.58/Ft	1
	Replace a Strip of Grassland with 1 Row of Woody Plants					
Tree/Shrub Establishment (USDA NRCS CPS 612)	Conversion of Annual Cropland OR Grassland to a Farm Woodlot	Conservation, hand planting, browse protection	Planting density ≥ 150 trees/acre. Bare root hardwood seedling or transplant: shrubs 6-18" tall trees 18-36" tall. Seedlings protection.	(1) Receipts of seedlings; (2) species, (3) number of live plants	\$915.3/Ac	1

Windbreak/ Shelterbelt Establishment (USDA NRCS CPS 380)	Replace a Strip of Cropland with 1 Row of Woody Plants OR	1-row, trees, containers, hand planted, protected	(1) Minimum width of tree row is 8 feet; (2) Plant protection is required; (3) ≥200 plants/acre.	(1) Visible: live tree/shrubs plants. (2) Receipts of seedlings purchased.	\$1.22/Ft	1
	Replace a Strip of Grassland with 1 Row of Woody Plants	1-row, Tree or Shrub, Wind Protection Fence	(1) Minimum width 8 feet for tree row and 4 feet for shrubs; (2) Plant protection is required; (3) ≥200 plants/acre.	(1) Visible: live tree/shrubs plants. (2) Receipts of seedlings purchased.	\$1.78/Ft	1
Riparian Forest Buffer (USDA NRCS CPS 391)	Replace a Strip of Cropland Near Watercourses or Water Bodies with Woody Plants OR Replace a Strip of Grassland Near Watercourses or Water Bodies	Bare-root, hand planted	General: (1) Plantings consist of hand planted bare- root shrubs and trees; (2) ≥ 35 plantings per acre; and (3) Tree protection is required. Materials: (1) Hardwood trees: 18- 36" tall; (2)	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$2,367.00/Ac	1

	with Woody Plants		Conifer trees: 1-1 (2 years old).			
Riparian Forest Buffer (USDA NRCS CPS 391)	Replace a Strip of Cropland Near Watercourses or Water Bodies with Woody Plants OR Replace a Strip of Grassland Near Watercourses or Water Bodies with Woody Plants	Bare-root, machine planted	(1) Bare-root shrubs and trees; (2) ≥35 plants/acre; (3) Tree Protection. Materials: (1) Hardwoods: 18-36" tall; (2) Conifer: 1-1 (2 yrs old).	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$2,223.16/Ac	1
		Cuttings, Small to Medium	(1) Hand planting; (2) ≥ 35 plantings per acre; and (3) Tree protection. Materials: 1/4"-1" diameter and 24-48"long.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$2,784.48/Ac	1

		Cuttings, Medium to Large	(1) Hand planting; (2) ≥ 35 plants/acre; (3) Trees: from 1/4-1" diameter & 24-48" long to 2-6" diameter & 6' long. (4) protection.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$7,183.68/Ac	1
		Small container, hand planted	(1) Shrubs and trees; (2) ≥ 35 plants/acre; (3) Tree protection. Potted shrub or tree size: 1 quart.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$3,749.36/Ac	1
		Small container, machine planted	(1) Planting: machine planted shrubs and trees; (2) ≥ 35 plantings per acre; and (3) Tree protection. Potted shrub/tree size: 1 quart.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$3,238.12/Ac	1

		Large container, hand planted	(1) Planting: hand planted shrubs and trees; (2) ≥ 35 plantings per acre; and (3) Tree protection. Potted or balled shrub or tree size: 2-3 gal.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$9,427.38/Ac	1
Multistory Cropping (USDA NRCS CPS 379)	Replace 20% of Annual Cropland with Woody Plants	Free trees or shrubs	For enhancement of multi-story agroforests or improvement of overstory on existing cropland.	(1) species names, (2) number of live plants	\$5.20/Ea	1
		Native shrub planting	Seedling size is no less than 1 qt.	(1) Receipts of seedlings purchased; (2) number of plants	\$9.86/Ea	1

		Native tree planting	Seedling size is no less than 1 qt.	(1) Receipts of seedlings purchased; (2) number of plants	\$9.86/Ea	1
		Non-native shrubs	(1) Bare root tree size is 6-18" tall, band pots of common species trees or shrubs, and/or (2) tree or shrub seedling size is ≥ 10 cu. in..	(1) Receipts of seedlings purchased; (2) number of e plants	\$7.74/Ea	1
		Non-native tree planting	(1) Bare root tree size 6-18" tall, band pots of common species trees or shrubs, and/or (3) Seedling containerized size is ≥10 cu. in..	(1) Receipts of seedlings purchased; (2) number of live plants	\$7.74/Ea	1

Prescribed Grazing (USDA NRCS CPS 528)	Grazing Management to Improve Irrigated Pasture Condition	Pasture, basic	A grazing management plan by a certified professional range manager to enhance rangeland health & ecosystem function; optimize efficiency & economic return through monitoring & record.	(1) Records of grazing dates and stubble height after grazing; (2) short term monitoring-photos and forage production; (3) sensitive area protection.	\$22.06/Ac	1
	OR Rangeland OR Non-Irrigated Pasture Condition	Range, basic			\$5.00/Ac	1
Range Planting (USDA NRCS CPS 550)	Seeding forages to improve rangeland condition	Native species broadcast	(1) Mainly native adapted perennial species (native forb, cool season and native perennial grass); (2) Seeding rate is 18 lb/acre PLS.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$575.56/Ac	1

		Native species high forb drilled	(1) Native adapted perennial species (native forb, cool season and perennial grass); and (2) No-till or range drill.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$526.38/Ac	1
		Native species low forb drilled	(1) Predominately native adapted perennial species (native forb, cool season and native perennial grass); and (2) no-till drill or range drill.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$351.22/Ac	1
		Nonnative species broadcast	(1) Three Species Mix - cool season and introduced perennial grass; (2) Seedbed preparation; and (3) Seeding rate is 18 lb/acre PLS.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$212.90/Ac	1

		Nonnative species drilled	(1) Three Species Mix - cool season and introduced perennial grass; and (2) No-till drill or drill to plant.	(1) Receipts of seeds purchased; (2) species; (3) good growth.	\$169.90/Ac	1
		Shrub plugs	(1) Shrub seedling or transplant, bare root shrubs 3 to 5 feet tall; (2) Planting density: 1000 plants/acre.	(1) Receipts of shrubs purchased; (2) species; (3) good growth.	\$2,578.46/Ac	1
Silvopasture (USDA NRCS CPS 381)	Tree/Shrub Planting on Grazed Grasslands	Establish Trees, Existing Grasses	≥20 plants/acre is required.	(1) Visible: live tree/shrubs plants. (2) Receipts of seedlings purchased.	\$193.90/Ac	

Compost Application to Annual Crop (CDFA)	Compost (C:N \leq 11) application to annual crops	Compost from Certified Composting Facility	Application rate must be between 3-5 tons/Acres	(1) Receipts of total compost purchased from a certified composting facility; (2) conversion factor for compost measured in volume to weight; (3) Compost analysis report including carbon and nitrogen contents and moisture content; (4) Must meet the total dry tonnages in the project; (5) Compost is spread or visible on the	\$50.00/ton	3
	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
Compost Application to Perennials, Orchards and Vineyards (CDFA)	Compost (C:N \leq 11) application to annual crops	Compost from Certified Composting Facility	Application rate must be between 2-4 tons/Acres		\$50.00/ton	3

	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres	ground at verification.	\$50.00/ton	3
Compost Application to Grassland (CDFA)	Compost (C:N > 11) application to grazed, irrigated pasture	Compost from Certified Composting Facility	Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
	Compost (C:N > 11) application to grazed rangeland		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3

Compost Application to Annual Crop (CDFA)	Compost (C:N \leq 11) application to annual crops	On-farm produced compost	Application rate must be between 3-5 tons/Acres	<p>(1) A farm log includes materials, method and temperatures during composting process;</p> <p>(2) Compost analysis report including carbon and nitrogen contents and moisture content;</p> <p>(3) Must meet the total dry tonnages in the project;</p> <p>(4) Compost is spread or visible on the ground at verification.</p>	\$50.00/ton	3
	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
Compost Application to Perennials, Orchards and Vineyards (CDFA)	Compost (C:N \leq 11) application to annual crops	On-farm produced compost	Application rate must be between 2-4 tons/Acres		\$50.00/ton	3

	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres	\$50.00/ton	3
Compost Application to Grassland (CDFA)	Compost (C:N > 11) application to grazed, irrigated pasture	On-farm produced compost	Application rate must be between 6-8 tons/Acres	\$50.00/ton	3
	Compost (C:N > 11) application to grazed rangeland		Application rate must be between 6-8 tons/Acres	\$50.00/ton	3

***Legend:**

Practice Implementation Name: This is corresponding to the quantification tool for GHG reduction benefit estimation.

Access the quantification tools at: www.arb.ca.gov/cci-resources.

Scenario Name: This is the corresponding agricultural management practice scenario under which a practice may be funded, as determined by CDFA in collaboration with USDA-NRCS.

Implementation Guidelines: Some agricultural management practices have additional requirements that may not be listed by the USDA- NRCS as a requirement in the Conservation Practice Standard (e.g., compost application rates, minimum widths for establishing some herbaceous and woody practices, or minimum tree densities for woody practices). These requirements ensure alignment with the GHG estimation methods. For more detail, see: www.arb.ca.gov/cci-resources.