

California Department of Food and Agriculture 2021 HSP Demonstration Projects - Applications Awarded*							
Application Rank**	Applicant Organization	Project Type ***	Project Description	Funds Requested	Cost Share (Recommended but not required)	County	GHG Reduction Estimation (MTCO <sub>2</sub> eq/year) ****
1	American Farmland Trust	Type A	AFT, Pacific Farming Company; University of California, Merced; Sierra Resource Conservation District (RCD); and Madera/Chowchilla RCD will demonstrate Biochar Application on an almond orchard. 15 field plots in a spatially-balanced complete block design includes 3 replicate blocks of 4 Treatments (T) and 1 Control (C). Ts include: low application rate of almond tree pruning biochar; high application rate of almond tree pruning biochar; low application rate of almond shell biochar; and high application rate of almond shell biochar. Pre-treatment and annual soil samples will assess soil organic carbon and health. UCM will take: soil GHG flux measurements monthly and during management events with a multi-gas laser-based analyzer (Picarro G2508) that allows in-situ measurements; monthly ecosystem measurements of gravimetric soil moisture, plant available nitrogen, and stomatal conductance; and fall and spring measurements of soil water infiltration using a single ring infiltrometer. AFT will analyze economic benefits. Partners will host 3 demonstrations.	\$249,980.61	\$9,334.85	Madera	Data to be collected
2	The Regents of the University of California (University of California, Davis)	Type A	This Type A project will (a) implement two eligible management practices - anaerobic digestate and food waste hydrolysate application, (b) measure soil organic carbon sequestration, field GHG emissions, and crop yields, and (c) assess multiple co-benefits including soil health indicators, reduced inorganic N fertilizer requirements, and economic cost-benefits to address important knowledge gaps. A replicated on-farm experiment will be implemented in Solano County on a silty clay loam soil under a typical annual crop rotation, making results widely representative. We will conduct farmer outreach and education through annual field days and other activities to reach 40 farmers per year. Extension efforts will focus on the benefits and barriers of practice adoption, particularly related to economics and nitrogen management. Field GHG emissions will be measured each growing season using internationally-accepted methods. Results will help CARB develop a GHG quantification methodology and implementation standard for anaerobic digestate and food waste hydrolysate application.	\$249,929.00	\$57,844.00	Solano	Data to be collected

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\*\*\*Type A projects will demonstrate implementation of conservation management practices, measure field GHGs emissions, and conduct analysis on cost/benefits for adoption of the proposed practice(s) and anticipated barriers. Type B projects will demonstrate implementation of HSP conservation management practices and/or conduct analysis on cost/benefits for adoption of the proposed practice(s) and anticipated barriers. Both project types must conduct outreach and education to other farmers and ranchers on the benefits of the implemented practice(s) to agricultural and environmental sustainability.

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3	Center for Land-Based Learning	Type A	Recent research demonstrates that biochar offers a multitude of agronomic and environmental benefits, especially in combination with compost application. However, on-farm use of biochar remains low because of uncertainty of the costs and benefits for different cropping systems. This project will increase knowledge of the carbon sequestration and GHG reduction potential of biochar in a new 5-acre olive orchard, address knowledge gaps on biochar's ecosystem impacts, and assist in streamlining methodology for its wide scale adoption. The Center for Land-Based Learning (CLBL) is collaborating with U.C. Davis and Boundary Bend Olives to investigate the potential of biochar and compost to 1) increase soil carbon sequestration, 2) reduce GHG emissions, 3) increase yields, and 4) improve soil health indicators. Treatments include biochar, compost, biochar plus compost, and a grower standard control. The project's location at CLBL's educational farm in Woodland will facilitate robust outreach to growers in Yolo County and statewide.	\$248,375.00	\$47,331.00	Yolo	Data to be collected
1	California Marine Sanctuary Foundation	Type B	Residue Management and Reduced Tillage is a practice that is important to regenerating soil health in agricultural production and storing carbon in working lands, yet little success has been reported and practical knowledge on methodology, equipment and cropping cycles is critical to achieve widespread adoption. This project will implement reduced tillage and residue management on a 28-acre block of land in Salinas Valley, reducing the number of tillage passes from conventional tillage by two-thirds (from 12-15 conventional tillage passes to 4-5 reduced tillage passes) and reducing the depth of soil disturbance. Braga Fresh will provide oversight and management of the reduced tillage practice on this field, which is in the final stage of transition from conventional to organic production. Through a total of at least 8 outreach events, including at least 3 on field demonstration events, the project team will share the methodology, equipment and lessons learned from this project.	\$99,936.22	\$47,175.71	Monterey	1

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2	University of California Division of Agriculture and Natural Resources	Type B	Winter cover cropping in rice is not widely adopted in California, and limited research has explored the survivability and nutrient dynamics of cover crop mixes in rice systems. This project aims to increase the potential adoption of winter cover cropping by increasing the information available to growers who want to utilize the practice. Three project sites have been chosen for demonstrating cover cropping to the broader rice industry while exploring four research objectives: 1) to determine the relative survival of species in a winter cover crop mix used in rice across the Sacramento Valley; 2) to assess potential cover crop biomass production as well as C and N levels in the biomass; 3) to determine the yield benefits to rice, if any, in comparison to a fallow field; and 4) to assess the dynamics of soil organic matter and nitrogen in the soil in comparison to a fallow field.	\$99,466.81	\$45,646.59	Butte, San Joaquin, Colusa	10
3	Rodale Institute	Type B	We aim to demonstrate economically viable and environmentally friendly management practices (i.e., cover cropping and no tillage) that improve soil health in vegetable production systems and disseminate information on the benefits of these practices to farmers across the state. A replicated randomized complete block design experiment will be conducted with the following treatments: T1) oat and vetch mix with conventional till; T2) oat and vetch mix with no-till; T3) oat and pea mix with conventional till; T4) oat and pea mix with no-till and C) control (no cover crop with conventional till). The effect of cover crop and tillage treatments will be evaluated on pumpkin and green cabbage yields and soil health on four acres certified organic land in Camarillo over the course of 3 years. Results will be disseminated to the stakeholders via field days and on-farm demonstration events, webinars, web articles, and conference presentations.	\$100,000.00	\$0.00	Ventura	2
4	Kandarian Organic Farms	Type B	Kandarian Organic Farms would like to expand existing carbon-sequestering soil health boosting practices across our farm. We have seed and equipment to expand grassed waterways to 5660' along the edge of our farm fields that are natural drainage ways. Management would like to install a hedgerow along one property boundary to provide privacy for the farm as well as our hipcampers. This hedgerow will also become a seed collection site and the farm will sell native hedgerow seed mixes online. The farm has already implemented some conservation cover, crop rotation, and cover cropping but would like to expand this acreage to see its impact on crop quality and soil health.	\$70,790.00	\$6,650.00	San Luis Obispo	19

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