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Topic Brief
January 2022

Carbon Farming Testing Shows Positive Results

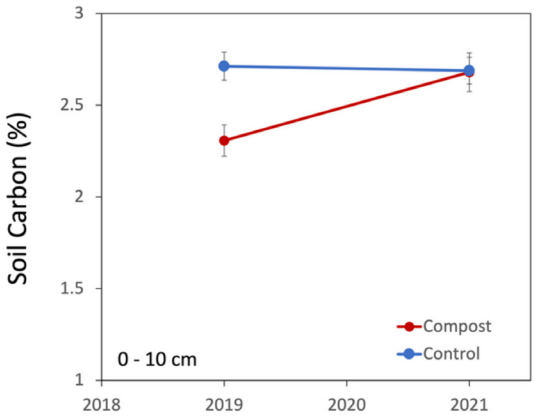
In 2017, StopWaste began working with the Alameda County Resource Conservation District and later additional partners (The Natural Resource Conservation Service and UC Merced) to add to the body of knowledge on how carbon farming can fight climate change through the application of compost on range lands. Carbon farming refers to practices—including the one-time application of compost—that increase the ability of the soil and plants to pull carbon from the atmosphere and sequester it deep in the soil.

Over the past two years, 3,500 cubic yards of compost (a quarter inch deep) has been applied to over 100 acres at StopWaste's 1,600-acre property near Livermore (in place as a landfill reserve), in particular on steep slopes. During this time partners have been collecting and analyzing data on soil carbon sequestration, greenhouse gas fluxes, changes in plant community composition and above-ground biomass, water infiltration, and water quality. According to UC Merced researchers, the initial results from the 2019 application show that the net change in soil carbon in composted plots relative to the control plots was 2.4 tons per acre. Additional monitoring will take place until at least March 2023.

In addition to the research on the effects of the compost application, the lessons learned regarding materials selection, costs, and feasibility will help ranchers, land managers, and other stakeholders plan and implement future carbon farming projects. For jurisdictions developing strategies to comply with California's SB 1383 procurement requirements, carbon farming offers an approach that also helps address climate action goals.

Funding for carbon farming work has come from grants from the Department of Water Resources, California Department of Food and Agriculture's Healthy Soils Program, and California State Coastal Conservancy.

Compost being spread over 100 acres at the Agency's property near Livermore.



Results show that compost significantly increased soil carbon concentrations after two years when compared to control plots.

Primary Conclusions (so far):

- Compost application is an effective carbon farming tool, even on steep slopes
- Gains in carbon are not offset by increases in soil greenhouse gas emissions.
- Gathering baseline data is crucial for accurate carbon accounting and monitoring.