Project background:
In Hawai‘i, the practice of bare ground fallow is often used to manage weeds and soil pests between crop cycles. However, bare ground fallow poses risks of soil erosion and non-native pest infestation and results in a loss of valuable topsoil and diminished soil quality for agriculture.

1. Barriers to implementation:
   a. Cover crop seed can be expensive and unavailable.
   b. Farmers are often not well informed.
   c. Demonstrations and information not specific to farmers’ situations.
   d. Cost of cover cropping not well quantified.

The initiative to advance the adoption of cover crops is a Best Management Practice that began within a Western SARE Research & Education Grant in 1998 (SW-98-01). Management of Soil-Borne Plant Parasites: Nematodes for Sustainable Production of Field-Grown Tomatoes and Cucumbers by Crop Cycling. Subsequent efforts, in due time, have been funded by the Hawai‘i Department of Health (under the 319(h) program), the American Farmland Trust and the USDA Natural Resources Conservation Service State Conservation Innovation Grant program.

The current effort is funded for three years (October 1, 2005 through September 30, 2008) by the USDA NRCS National Conservation Innovation Grant program.

Project Objectives:

1. Demonstrate benefit of cover crops in soil fertility levels, beneficial insects, pest reduction, weed suppression and soil compaction to farmers on five islands, by December 31, 2008, documenting any impacts to key crop yields.
2. Quantiﬁed the direct cost beneﬁt for selected cash crops by estimating yield gains (if any) and examining crop-crop interaction effects on soil quality and maximum yield. The goal of fertilizer cost savings will be calculated.
3. Motivate cooperators to implement cover crops on 10% of their farmed acreage.
4. Guide farmers through the process of using cover crops by providing on-site consultation outreach.

Project Methods:

1. Fourteen ﬁeld sites on five islands (Kaua‘i, O‘ahu, Moloka‘i, Maui and Hawai‘i) being planted with sun hemp, oats, buckwheat and sun hemp with oat cover crops.
2. aluminium card traps used for monitoring insect populations on six sites for ﬁve cropping situations (untreated, treated, and soil-fumigated treatments).
3. O‘ahu Resource Conservation and Development Council (O‘ahu RCD) staff and Crop Care Hawaii’s (CC) is conducting ﬁeld plantings, collecting soil and tissue samples for soil fertility analysis and assessing weed suppression and percent ground covered by the use of the selected cover crops.
4. O‘ahu RCD is staging 14 square ﬁeld days at demonstration sites.
5. Susan Schneck, Ph.D. (Hawai‘i Agriculture Research Center) is measuring soil nematode density on all 14 sites before and after cover cropping in summer months.
6. Mark Wright, Ph.D. (UHI – CTAHR) is monitoring insect populations on six sites for ﬁve cropping situations (untreated, treated, and soil-fumigated treatments).
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Project Progress to Date:

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