
Cover Crops and Conservation Covers for Better Harvests

USDA NRCS Practices (340) and (327)



Conservation covers grown under trees can crowd out weeds and improve the soil.

What are cover crops and conservation covers?

Cover cropping is a traditional Pacific Island practice that is very beneficial for the land. Grasses, legumes, or small grains are grown to protect and improve exposed soil. These crops can be planted immediately after harvesting the cash crop and plowed down yearly, or they can be planted and allowed to grow for several years.

- A **cover crop** (or green manure) is a short-term crop that you can kill with herbicide, roll, or plow down into the field to add nutrients for the next crop, to protect the soil surface, and to improve the topsoil. ‘Tropic Sun’ sunnhemp (*Crotalaria juncea*) is a good example.
 - A **conservation cover** (also known as permanent cover crop) is a long-term crop grown year-round to smother weeds and protect topsoil. You can plant them in permanent strips on sloping land and between tree rows in orchards. ‘Tropic Lalo’ paspalum (*Paspalum hieronymii*) is a good example.
-

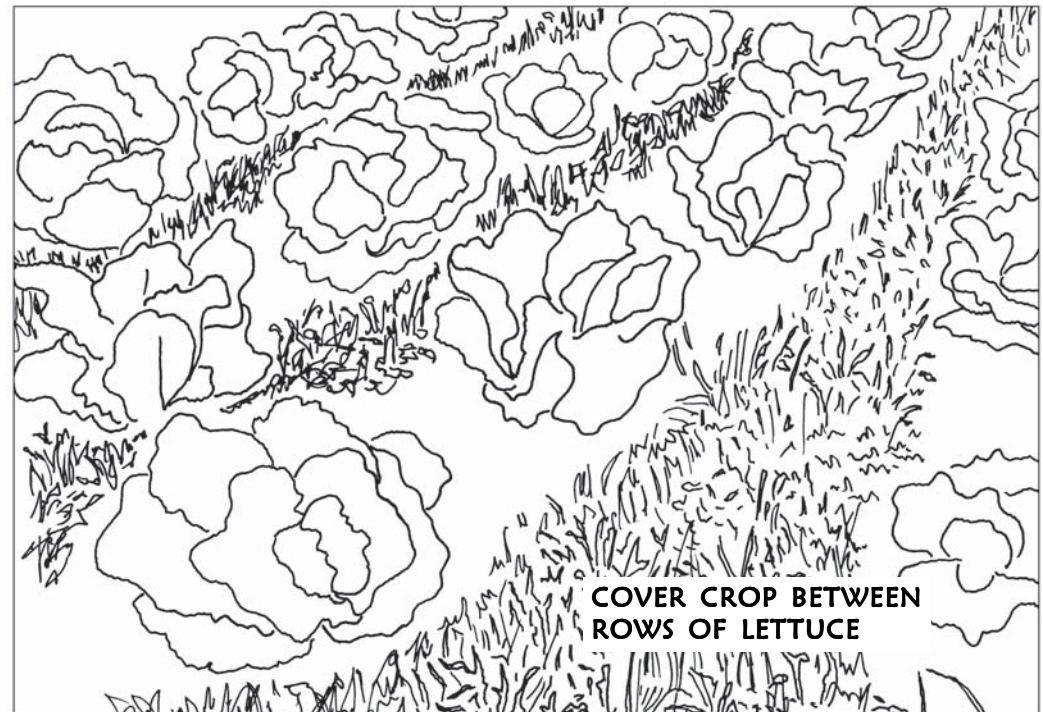
Why use cover crops and conservation covers?

Pacific Island farmers can benefit from cover cropping on their farm. Using this practice can:

- protect topsoil. Cover crops protect the soil surface from raindrops. They help to slow rainwater down. The roots of cover crops hold soil particles in place.
- loosen and improve the soil, allowing more water to soak in and be conserved.
- increase organic matter in the soil.
- fertilize the cash crop to increase the harvest (if a nitrogen fixing cover crop such as a legume is grown).
- suppress the growth of weeds.
- reduce plant diseases, insect pests, and soil nematodes.

Where and when are cover crops and conservation covers used?

- Between rows in crops
- Under fruit and other trees
- In fields with heavy infestations of plant diseases and pests such as nematodes
- Early in the growing season when new crops are still small and filling in
- Between growing seasons when fields are left unplanted



Grow cover crops and conservation covers between rows in crops, especially early in the growing season when crops are still small and filling in. They can also help control plant diseases and pests.



'Tropic Sun' sunnhemp
(*Crotalaria juncea*)

Plan for your cover crops and conservation covers

To get good growth for both your crop and your cover crop:

- pick a cover crop that will not compete with your cash crop for water and soil nutrients.
- be sure your cover crop won't shade out your cash crop.
- be sure the cover crop won't attract insects and diseases that will attack your cash crop.
- break disease cycles by growing non-legume cover crops (such as grasses or small grains) in some years.
- don't use cover crops that can escape from the farm and become problem weeds in natural areas or forests.

For a **cover crop**, choose a plant that:

- fixes nitrogen (legume) or other plant nutrients.
- grows very quickly and produces a lot of tender leaf growth.
- decomposes and releases nutrients quickly when plowed down.

To improve **soil quality** and **residue management**, choose a plant that:

- has a thick, stiff stem yet can be cut or mowed without a problem.
- decomposes more slowly.

For a **conservation cover**, grown in permanent strips between cropland fields and under trees in orchards, choose a plant that:

- does not grow too tall and shades out the cash crop.
- does not twine or wrap around trees.
- grows well under shade.
- crowds out weeds.
- can handle light foot traffic from animals or machinery.

For current lists of suggested cover crop and conservation cover plants suitable for your farm, contact the local office of the Cooperative Extension Service or the local USDA NRCS field office. They can provide you with ideas for plant species, planting rates, planting methods, fertilizer and liming rates.

For the best results, combine **cover crop** (340) and **conservation covers** (327) with other conservation practices:

- **Vegetative Barrier** (601): growing small strips of stiff plants across the slope
- **Residue Management** (329): leaving slash in the field for soil protection
- **Nutrient Management** (590): soil and plant testing to decide how much fertilizer to use
- **Contour Farming for Cropland** (330): carrying out farm operations across the slope
- **Contour Farming for Orchards** (331): carrying out farm operations across the slope
- **Alley Cropping** (311) and **Hedgerow Planting** (422): growing hedges of shrubs and trees across the slope

Additional information is available from your local USDA Service Center or at www.pb.nrcs.usda.gov and www.hi.nrcs.usda.gov.



The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-2791 To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (800) 245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer. **Conservation System Guides for Pacific Basin Farmers and Ranchers** (fact sheets and PowerPoint programs) produced by the University of Hawaii, CTAHR NREM. Funding provided by USDA NRCS CIG Grant (Agreement No. 69-9251-5-682). PI: Dr. Carl Evensen. Authors/Instructional Designers: L.F. Castro, J. Smith. Illustrator: N. Hulbirt.

