
Residue Management:

Using Plant Residues (Slash) for Moisture, Weed Control, and Soil Protection

USDA NRCS Practice (329)



Pacific Island farmers use left over plant materials (leaves, branches, stalks, etc.) called residue or slash on their fields to nourish and protect their topsoil.

What is residue management?

Pacific Island farmers use left over plant materials (leaves, branches, stalks, etc.) called **residue** or slash on their fields to nourish and protect their topsoil.

Leaving soil bare and uncovered in tropical climates often causes problems. Instead of leaving the soil bare in your fields, arrange plant matter left over from the harvest in strips across the slope or beneath orchard trees. Then plant the next crop into the plant matter, by hand either with a digging stick or tool, or with special machinery. This is a very respected and traditional practice used by farmers around the Pacific.

Why use residue management?

Pacific Island farmers can benefit from residue management on their farm. Using this practice can:

- save labor on collecting and burning slash.
 - protect the soil surface and help prevent raindrop erosion.
 - slow water down and let it to soak into the soil.
-

- fertilize the crops and increase the harvest, especially if using slash from nitrogen fixing crops (called legumes) that are rich in nutrients. Organic matter from plant material helps the soil become more fertile and easier to work.
- protect new plantings and smother out weeds.
- provide food and shelter for wildlife.

To learn more about protecting your farmland from water damage, read ***Protecting Soil on Pacific Island Farms.***

Where and when is residue management used?

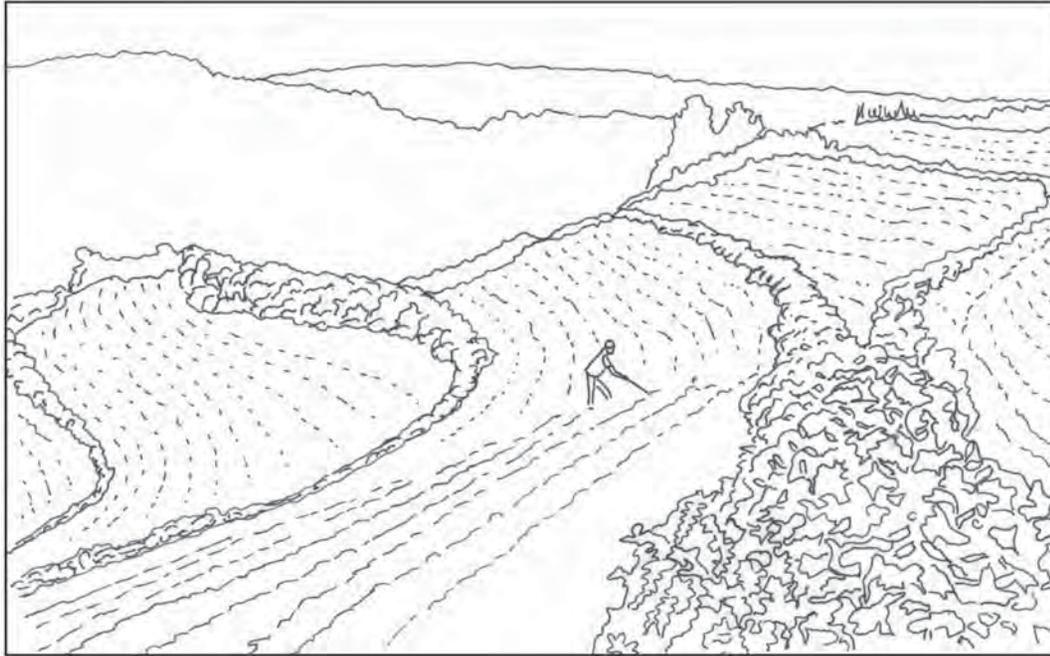
- Between rows in crops
- Under fruit trees
- Early in the growing season when new crops are still small and filling in
- Between growing seasons when fields are left unplanted

Where is residue management not used?

If your field is infected with certain plant diseases, crop residues may infect the next crop. Don't place residue directly against plant



Instead of leaving the soil bare in your fields, arrange plant matter left over from the harvest in strips between rows, across the slope, or beneath orchard trees. Then plant the next crop into the plant matter.



Combine residue management with contour farming and other conservation practices for more soil fertility and slope protection.

stems and trunks. Consider using crop rotations to break disease cycles. Consult with the Cooperative Extension Service about how to manage plant diseases.

Plan for Residue Management

You can use residue management on the farm in several different ways:

(1) **Leave soil covered.** After the harvest, instead of cleaning the fields and burning slash, leave leftover plant material in place. Save time and labor by letting leaves, branches, and stalks break down on the ground until you are ready to plant again. This will protect your valuable top soil from erosion until you are ready to plow.

(2) **Use strip cropping on sloping fields.** Leaving most of your field covered with slash, clear and cultivate small rows (or strips) of ground across the slope for planting. Clear small areas with tilling or through careful applications of herbicide, and plant each section quickly. Between rows, leave strips of soil covered with slash or mulch.

(3) **No Till.** This traditional Pacific Island method to grow food in steep areas is beneficial for the land. Clear the planting area by hand or with spot doses of herbicide. Plant directly into the slash or plant residue left in the field without doing any plowing or tilling. This work is mostly done by hand. There is special equipment (called no-till planters or drills) for this type of cultivation, but it is difficult to locate in the Pacific region.

Weed Management: Sometimes certain weeds can be used to protect the soil while your crop is growing. Weed residue left in the field will provide ground cover between your crop plants. Cut, pull or spot-spray weeds instead of using mechanical tillage, and leave plant material in place.

Do not do this with weeds that grow from cut pieces or that can escape from the farm and become problem weeds in natural areas or forests. Remove these invasive weeds from your land. Consult with your local Cooperative Extension Service about weed management options for your farm.

For the best results, combine **residue management** with other conservation practices:

- **Vegetative Barriers (601):** growing small strips of stiff plants across the slope
- **Hillside Ditch (423):** digging a small ditch across the slope to divert rainwater
- **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 bushes 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.

