
Vegetative Barriers for Protecting Topsoil

USDA NRCS Practice (601)



What are vegetative barriers?

Vegetative barriers are permanent strips of stiff, dense grasses grown across a slope or across a drainage way.

Why grow a vegetative barrier?

Pacific Island farmers can benefit from growing a vegetative barrier on their farm.

Using this practice can:

- protect topsoil. Barriers help slow rainwater down and filter out soil particles.
- re-direct and divert water across a slope.
- loosen and improve the soil, allowing more water to soak in and be retained.
- stabilize the downhill side of a hillside ditch.

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

Where are vegetative barriers used?

- On the contour within fields with moderate slopes (for sheet and rill erosion)
 - In rows across a drainage way (for small gully erosion)
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Plan your vegetative barriers

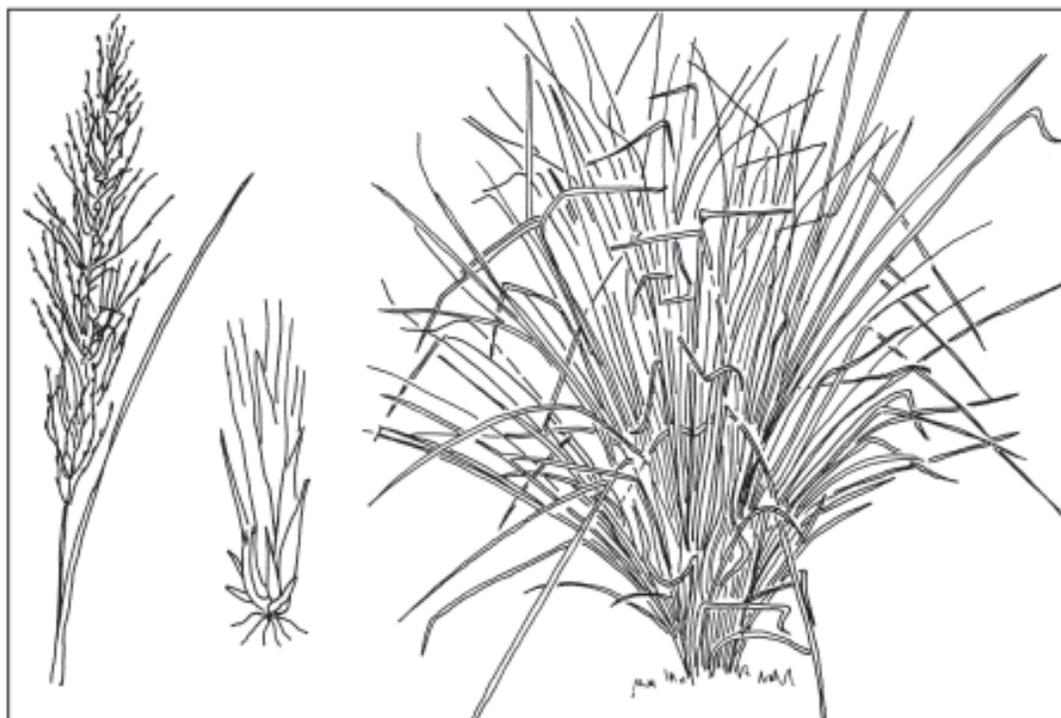
Plant Selection

Pacific island farmers often grow vetivergrass (*Vetiveria zizanioides* syn. *Chrysopogon zizanioides*) for vegetative barriers because it is stiff and dense, making it a good filter. It is a sterile grass that won't spread. It has few pests and tolerates fire. Vetivergrass is deeply rooted and doesn't interfere with the growth of most crops. This grass is inexpensive, easy to grow, and needs little care.

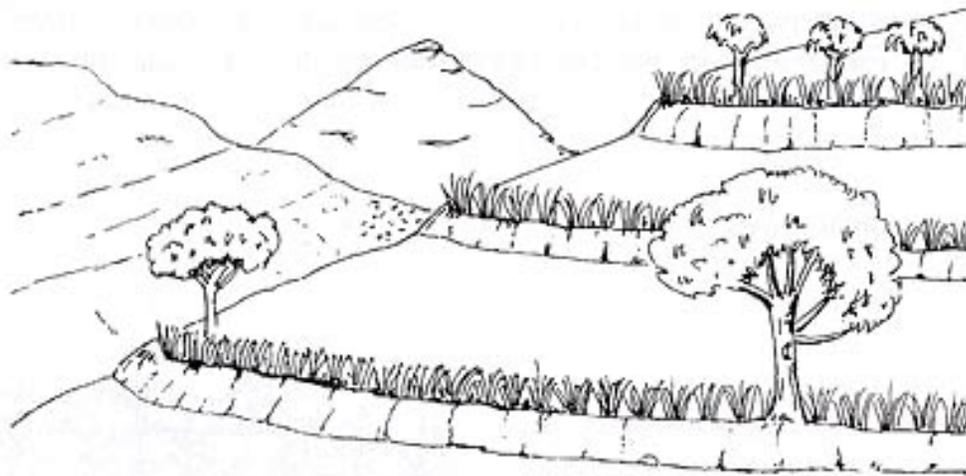
Other plants may also be used. For current planting suggestions for vegetative barriers, contact the local USDA NRCS field office.

For in-field vegetative barriers

- Plant level and across the slope, without any low spots where water can channel and break through. Barriers shouldn't be more than 492 ft (150 meters long) along the contour. They should be flat across the slope, no steeper than 1-2% grade.
- Plant 1 or 2 rows of plants closely together (no more than 6 inches apart)



Vetivergrass (*Vetiveria zizanioides* syn. *Chrysopogon zizanioides*)



- so that the plants can quickly grow together to form a barrier with no gaps.
- Protect the barrier from damage by preventing animals and machinery from crossing through it.
 - On steep slopes (25% and greater), use **hillside ditches** (423) and vegetative barriers together.

Spacing for in-field vegetative barriers

% Slope of Field Spacing

10%	60 feet (18.3 meters)
20%	30 feet (9.1 meters)
30%	20 feet (6.1 meters)
40%	15 feet (4.6 meters)
50%	12 feet (3.7 meters)

For vegetative barriers across channels

- Plant at least 2 rows of closely spaced plants about 1½ ft (46 cm) apart.
- Plant the barriers across the base of the gully and up the sides, about 1½ ft (50 cm) above the bottom of the channel. This is to stop water from flowing around the ends of the barrier during heavy rains.

For the best results, combine **vegetative barriers** with other conservation practices:

- On steep slopes (25% and greater) combine vegetative barriers with a **Hillside Ditch (423)**: digging a small ditch across the slope to divert rainwater
- **Residue Management (329)**: leaving slash in the field for soil protection
- **Contour Farming (330)**: carrying out farm operations across the slope
- **Contour Farming for Orchards (331)**: carrying out farm operations across the slope
- **Cover Crops (340)**: growing crops to plow down and fertilize cash crops
- **Conservation Cover (327)**: growing permanent plant cover to protect topsoil and smother weeds

Additional information is available from your local USDA Service Center or at <http://www.nrcs.usda.gov/>



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