**Cooperative Extension Service**
College of Tropical Agriculture and Human Resources
University of Hawai'i at Mānoa

*Sustainable Agriculture*
*Cover Crops*
**Aug. 2002, SA-CC-6**

# 'Tropic Lalo' Paspalum

*Jody Smith[1] and Hector Valenzuela[2]*
*Departments of [1]Natural Resources and Environmental Management and [2]Tropical Plant and Soil Sciences*

When Hawaii's farmers need a low-growing cover crop for their coffee, ornamental tree, or macadamia orchards, the USDA Plant Materials Center on Molokai often recommends the cultivar 'Tropic Lalo' paspalum (*Paspalum hieronymii*). This non-invasive grass grows fairly quickly, forming a thick mat of vegetation that chokes out weeds and protects valuable topsoil from erosion. As the orchard canopy fills in, 'Tropic Lalo' adjusts to the decline in sunlight. This grass can also endure the rigors of farm life by surviving well under equipment traffic, and it is often planted on access roads and other equipment-bearing areas.

## Benefits provided by 'Tropic Lalo'

***Excellent*** low-maintenance ground cover for erosion control

***Good*** for quick growth and establishment, for suppressing weeds, for access roads

***Tolerates*** shade, acidic and low fertility soils

***Use in*** plantation and orchard cropping systems including macadamia, coffee, and papaya

## Characteristics

'Tropic Lalo' is a rapidly spreading, stoloniferous grass that usually attains a height of about 12 inches (30 cm) but may reach a height of 24 inches (60 cm) under moist, fertile conditions. The plant originated in Brazil and was introduced to Hawaii in 1968. The leaves are linear, approximately 3–9 inches (8–23 cm) long and ½ inch (13 mm) wide. Coarse hairs about 1/16–⅛ inch (1.6 to 3 mm) long cover the leaves and stems. The flowering stems are semi-erect and 12–24 inches (30–60 cm) high, depending upon soil fertility. The plant produces many stolons that readily root at the nodes, resulting in a dense mat. Seed reproduction is minimal, and only about 1–2% of the seed produced is viable, so the plant is propagated vegetatively.

'Tropic Lalo' is slower growing and requires less management than kikuyugrass. It provides a better ground cover than bahiagrass and hilograss, and it grows faster than bahiagrass.

## Environmental requirements

'Tropic Lalo' is adapted to a wide range of soil textures from coarse to fine, and it tolerates soil pH from 4.5 to 7.0. It is somewhat tolerant of infertile soils. This grass is well adapted to subtropical areas that have an annual rainfall of 40–100 inches (1000–2500 mm). 'Tropic Lalo' does not tolerate long dry periods. It is somewhat tolerant of low-lying, wet soils but not of waterlogged conditions. Newly established plants are susceptible to drought. 'Tropic Lalo' tolerates 50–60% shade with slower growth and less dense mat formation under shaded conditions. In Hawaii, 'Tropic Lalo' grows year-

Published by the College of Tropical Agriculture and Human Resources (CTAHR) and issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Andrew G. Hashimoto, Director/Dean, Cooperative Extension Service/CTAHR, University of Hawaii at Manoa, Honolulu, Hawaii 96822. An Equal Opportunity / Affirmative Action Institution providing programs and services to the people of Hawaii without regard to race, sex, age, religion, color, national origin, ancestry, disability, marital status, arrest and court record, sexual orientation, or veteran status. CTAHR publications can be found on the Web site <http://www2.ctahr.hawaii.edu> or ordered by calling 808-956-7046 or sending e-mail to ctahrpub@hawaii.edu.

round at elevations ranging from sea level to 4000 ft, according to the USDA Natural Resources Conservation Service (NRCS). It is adapted to a wider environmental range than seashore paspalum, a crop that is usually planted around backish water.

## Establishment

'Tropic Lalo' is vegetatively propagated from sprigs (stem cuttings) or stolons planted on grids ranging from 12 x 12 inches up to 36 x 36 inches. The closer spacing is recommended when the field has a history of weed infestation. The propagules are either broadcast onto the soil surface and lightly covered by disking or buried in shallow furrows 1–3 ft apart. The minimum planting rate should be 40 bushels of sprigs or stolons per acre; use more for closer spacings. In 12 x 12 inch plantings, complete cover may be achieved in six weeks.

If propagation material is limited and the area to be planted is large, it may be necessary to establish a nursery as a source of planting material.

Use herbicides, disking, or both to control weeds before planting. Seedbed preparation can be minimal, but establishment of 'Tropic Lalo' is usually most successful in a well prepared seedbed.

The sprigs and newly established plants are susceptible to drought, so the planting may have to be irrigated to keep the soil moist. Mow the crop frequently during establishment to control weeds.

## Uses

### *Weed control*

Once established, 'Tropic Lalo' smothers weeds with its thick, mat-like growth habit, making it a good low-maintenance tool for reduced-chemical or nonchemical weed control.

### *Erosion control on slopes*

Farmers can rely on an established cover of 'Tropic Lalo' paspalum as a sustainable soil conservation tool to preserve valuable topsoil on sloping fields and prevent waterways and roadsides from gullying. This grass' thick mat and strong root system effectively holds soil in place. The mat will trap large amounts of sediment from water runoff.

### *Access roads*

Plan to grow 'Tropic Lalo' in areas that experience heavy equipment use. This strong, rugged grass has proven its hardiness in field access roads and in other heavy traffic zones.

### *Soil quality improvement*

Significant soil quality benefits such as improved soil structure, better water infiltration rates, and increased water-holding capacity result from using permanent cover crops such as 'Tropic Lalo'.

### *Grass/legume mixtures*

Sustainable farmers often mix two or more cover crops to combine the agronomic benefits of grasses and legumes. When well designed, this method of crop diversification tends to reduce the farmer's risks from soil, pest, and weather problems. Try combinations of 'Tropic Lalo' with white clover (*Trifolium repens*), big trefoil (*Lotus pedunculatus*), or non-invasive desmodiums.

## Cover crop maintenance

'Tropic Lalo' responds to nitrogen (N) fertilizer applications at levels of up to 200 lb/acre/year (224 kg/ha/year), but once the cover is established, N fertilizer applications may not be necessary. In orchards, fertilizer applied to the trees should provide sufficient nutrients for the companion cover crop. 'Tropic Lalo' may be grown in mixture with legumes to benefit from their N fixation.

## Mowing

'Tropic Lalo' does not need frequent mowing unless a closely cut turf is required, such as for a lawn or for macadamia nut orchards, to facilitate harvesting. Mowing may be necessary 6–30 times a year, depending on the use and location. The cutting height can be less than 1 inch (2.5 cm).

## Management cautions

The fact that 'Tropic Lalo' cannot be grown from seed and must be sprigged is considered a negative factor by some farmers in Hawaii. The initial cost of establishment is high due to the labor involved. In some loca-

tions, the crop may not persist for long, and disease incidence may increase under conditions of partial shade and high humidity. 'Tropic Lalo' is palatable and readily grazed, but its slow regrowth makes it a poor pasture plant.

## Pest problems

'Tropic Lalo' can be damaged by the grass webworm, *Terpetogramma licarsisalis* (Walker).

## For assistance:

Contact your nearest Cooperative Extension Service office for additional assistance in selecting appropriate cover crops and green manures for your farm and cropping situation. Help can also be obtained from the USDA Natural Resources Conservation Service field offices located on each island.

Visit CTAHR's Sustainable Agriculture for Hawaii Program Website at <http://www.ctahr.hawaii.edu/sustainag> to find additional information about green manure and cover crops. The site also includes references and links to other useful on-line resources.

## Sustainable Agriculture in Hawaii . . .

. . . integrates three main goals—environmental health, economic profitability, and social and economic equity. Sustainable farms differ from conventional ones in that they rely more on management practices such as crop diversification and crop rotation, agroforestry, integrated pest management, rotational grazing, and innovative marketing strategies. For further information on Sustainable Agriculture in Hawaii, contact:

Dr. Richard Bowen,
Hawaii SARE Program Coordinator
phone (808) 956-8708
e-mail: <rbowen@hawaii.edu>
<http://www.ctahr.hawaii.edu/sustainag/>

This material is based on work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, and the Agricultural Experiment Station, Utah State University, under Cooperative Agreement 98-ESAG-1-0340. Portions of this text were adapted from the USDA Natural Resources Conservation Service Hawaii Field Office Technical Guide, Section IV, Code 340, "Cover and Green Manure Crop" May 1992. Plant drawing reprinted from Managing Cover Crops Profitably, 2nd edition, published by USDA's Sustainable Agriculture Network (SAN), original illustration by Marianne Sarrantonio and Elayne Sears. Logo drawing courtesy of Deitrich Varez.