



Western SARE Program

Phil Rasmussen, Coordinator
Utah State University
Agricultural Science Building
Room 305
4865 Old Main Hill
Logan, Utah 84322-4865
(435) 797-2257
(435) 797-3344 fax

Commonwealth of the Northern Mariana Islands

SARE Coordinator:

Allan Sabaldica, DVM
Livestock Extension Specialist
CREES-Northern Marianas College
P.O. Box 135
San Jose, Tinian, MP 96952
(670) 433-2576
allans@nmcnet.edu

<http://wsare.usu.edu>

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IMPROVING LIVESTOCK FORAGE

Situation

Rising populations on the islands of the Western Pacific require increasing supplies of animal protein. Rather than enduring the expense of importing animal meat and feeds, the islands might be better served by striving for self-sufficiency.

Island goat producers currently graze their animals on poor, undeveloped pastures, supplementing with imported alfalfa hay or grains. This

inefficiency doubles the time it should take to produce a goat. Producers without pasture lands gather feed daily in a "cut and carry" system that requires driving 5 to 10 miles a day, increasing production costs and reducing efficiency.

Likewise, cattle producers are often discouraged by the low productivity of herds raised on poor quality pasture with little access to water, resulting in overgrazing, invasive weeds, soil erosion and water contamination.

Correcting these inefficiencies, and improving island self-sufficiency, will require research into the sustainable production of animal feeds and improved management systems for animal production.

Objectives

1. Conduct forage evaluation and demonstration



This pasture is a mix of signal grass and Guinea grass.

trials that incorporate adaptable forage grass and legume species into a pasture improvement management plan for ruminant and poultry producers

Research and Education Grant

Project Number: SW06-042

Project Title: Sustainable Forage and Livestock System for the Island of Tinian

Principal Investigator:

Allan Sabaldica, DVM
CSREES-Northern Marianas College
P.O. Box 134
San Jose, Tinian, MP 96952
(670) 433-2576
allans@nmcnet.edu

Co-Investigator:

Glen Fukumoto
University of Hawaii
Extension Agent
Livestock Programs
79-7381 Mamalahoa Hwy
Kealahou, HI 96750-7911
(808) 322-4892
gfukumoto@hawaii.edu

Producer:

Sam Palacios
Tinian, CNMI
(670) 433-1401

SARE Grant: \$10,000



Cattle graze on mix of Guinea grass and mimosa.



Western SARE, a USDA organization, funds grants for research and education that develop or promote some aspect of agricultural sustainability, which embraces

- *profitable farms and ranches*
- *a healthy environment*
- *strong families and communities.*

The Western Region, one of four SARE regions nationwide, is administered through Utah State University.

Western SARE:
<http://wsare.usu.edu>

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2. Raise the level of technical knowledge and management skills for beef producers and provide agricultural professionals with information on pasture and cattle management
3. Develop a goat industry as an additional source of income for small farmers and provide options for improved goat production
4. Develop awareness of using legumes to enhance soil fertility and encourage manure disposal on pastures
5. Explore methods for improving pasture and extending the grazing season in ways that are economical and efficient



Actions

A pasture improvement plan and rotational grazing system were established on the 35-hectare Tinian ranch of Sam Palacio. The land was subdivided into eight paddocks for 35 cattle and planted with several combinations of these grasses and legumes:

- Local grasses: Guinea grass and signal grass
 - Introduced grasses: buffel grass, whittet kikuyu and Guinea grass
 - Legumes: leucaena, mimosa and sunn hemp
- Based on advice from the



Turkeys forage inside one of two pens designed for the project. Below, bare grass patches show the path of the other portable chicken pen.

Natural Resources Conservation Service, Palacio rotated his cattle every seven days, providing an eight-week rest period for the pasture in each paddock.

A qualitative evaluation of the system will be based on cattle performance, rancher observations and the palatability of the grasses.

In addition to the rotation trials, the project team set up two types of portable chicken pens to demonstrate pastured poultry, featuring turkeys and chickens grazing grass and perennial peanuts. The portable pens, each built with different materials based on needs and purposes, were moved every week.

Results

Project results will evolve in 2008, and field days and workshops will extend knowledge gained to producers and ag professionals.

Potential Benefits

Producers should become more knowledgeable about



sustainable grazing systems and management practices, which will result in:

- Increased productivity
- Reduced input requirements
- Increased profitability
- Improved management of the island's natural resources

Pacific island livestock farmers will decrease their feed costs, save time on farm operations and improve general farm sustainability.