

Sustainable Forage and Livestock System for the Island of Tinian

Allan Sabaldica, (Northern Mariana: Research & Education Grant)

Project Number: SW06-042

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

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One type of portable pen used for grazing poultry

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Rectangles show where the poultry have been after the weekly pen moves

Producer: Sam Palacios
Tinian CNMI
(670) 433-1401

SARE Grant: \$10,000

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



Turkeys forage inside another type of pen

Chickens foraging inside the portable pen

Actions:

A pasture improvement plan and rotational grazing system were established on the 35-hectare Tinian ranch of Sam Palacios. 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 Natural Resources Conservation Service, Palacios 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.



Cattle graze on a mix of Guinea grass and mimosa



A grass mix in one of the eight test pastures

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 natural resources

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



This pasture is a mix of signal grass and Guinea grass