

# Luta Windbreak/Agroforestry

## Ephram Taimanao (Northern Mariana Islands: Farmer/Rancher Grant)

Project Number: FW01-091

Title: Luta Windbreak/Agroforestry

Coordinator: Ephram Taimanao  
Joe & Sons Enterprises  
P.O. Box 887  
Rota MP 96951  
(670) 532-0500

Technical Advisor: Scott Crockett  
Soil Conservationist  
Natural Resources Conservation Service  
Rota MP

SARE Grant: \$7,485



Ephram Taimanao and his Western SARE Farmer/Rancher Grant technical advisor, Scott Crockett of NRCS

### Situation:

Most of the land on the Commonwealth of the Northern Mariana Islands is broken into small, privately owned parcels. This, coupled with frequent and devastating typhoons, makes it difficult for landowners to produce an income. Planting a windbreak could protect crops, but the space required for the windbreak would take scarce land out of production.

A solution could be a windbreak that offers both protection from tropical storms and an agricultural commodity that produces an income.



The da'ok hedgerow

### Objectives:

Establish a dense multi-row windbreak/shelter belt that will protect fragile crops from prevailing and seasonal winds and, at the same time, produce a marketable crop.



Da'ok trees in the foreground were planted after the typhoons

### Actions:

Two types of trees were planted with seedlings acquired from a local nursery.

- Da'ok (*Calophyllum inophyllum*), a native typhoon-resistant tree that produces an oil-rich nut used in aromatherapy, was planted as the primary row.
- Various citrus trees, the fruit from which could be sold at local restaurants and grocery stores, were planted on the inside rows, staggered to create a closed wall of leaves at maturity.

The planting scheme was adapted to fit local conditions:

- Trees were planted in three or four rows, depending on topography.
- The low-fertility soils were supplemented with a 16-16-16 fertilizer.
- Da'ok performs well on shallow soils, as found at field edges, so they were planted as the primary row.
- Soil depth increases further into the field, so fruit trees were planted there between rows of existing banana plants.
- As fruit trees matured among the sheltering banana plants, the bananas were to be phased out, leaving only healthy citrus.

The project suffered two major weather-related setbacks:

- Typhoon Chata'an on July 7, 2002, toppled both windbreak trees and banana plants and caused salt damage to both.
- On Sept. 8, 2002, Super Typhoon Pongsona devastated seedlings that had survived Chata'an.



NRCS conservationist Crockett checks a fruit tree that survived the typhoons

### Results:

The disastrous typhoons allowed the project team to assess which varieties survived better than others and might be good candidates for future plantings. Meanwhile, the results of the project will take several years to assess. Because of optimism over the potential benefits of commercially productive windbreaks, the project was continued beyond the original SARE funding date to provide for replanting and evaluation.



The view to the ocean across Taimanao's windbreak trees

### Potential Benefits:

If the windbreaks of commercially valuable trees are successfully established, they can offer a variety of benefits:

- The windbreaks can virtually eliminate damage from prevailing winds to fragile crops like bananas, papayas, taro and okra.
- Wind-borne diseases and moisture loss to evaporation and evapo-transpiration can be greatly reduced.
- The trees will improve the aesthetics of the property.
- Because many of the viable market trees, such as da'ok, are native to the islands, cultivation of them could benefit wildlife.



A typhoon survivor