

Replacing Imported Energy Feeds by Storage of Excessive Breadfruits as Out-of-Season Pig Feed

James Currie, Vice President (FSM: Professional + Producer Grant)

Project Number: FW06-307

Title: Replacing Imported Energy Feeds by Storage of Excessive Breadfruits as Out-of-Season Pig Feed

Coordinator: James Currie
Vice President
Cooperative Research and Extension
College of Micronesia-FSM
P.O. Box 159
Kolonia, Pohnpei, FSM 96941

Producers Advisor: Kalwin Kephas
Director
College of Micronesia-FSM
Kosrae Campus
P.O. Box 37
Tofol, Kosrae, FSM 96944

SARE Grant: \$16,712



A perfect breadfruit

Situation:

Swine production is the primary livestock industry of the Federated States of Micronesia. Pigs are a major part of traditional and cultural practices. However, the cost of producing pigs in Micronesia is extremely high, owing mainly to the expense of importing commercial feeds.

Breadfruit, meanwhile, is one of the most common indigenous trees in the tropical islands. Its football-size fruit has long been a traditional starch crop throughout Oceania. Breadfruit is relatively high (40-50%) in dry matter and produces twice as much energy as bananas. Although not rich in protein, breadfruit is a fair source of minerals and vitamins.

Scavenging domestic pigs routinely eat over-ripe breadfruit that has fallen to the ground, which suggests that breadfruit can be an acceptable energy source for swine.



Cut breadfruit showing damage from disease

Objectives:

- Develop a feeding regime using fermented breadfruit to reduce feed cost by at least 25% for growing-finishing pigs and breeding stocks
- Develop a feed formula using fermented breadfruit
- Develop sustainable practices for preparing fermented breadfruit for swine feed
- Conduct workshop/trainings in the Federated States of Micronesia based on the results of feeding trials and preparation methods
- Determine the actual cost of production in the Federated States of Micronesia



Damaged breadfruit, unfit for humans but great for pig feed

Actions:

The project team will take these approaches:

- Randomly select experimental and control growers from the College of Micronesia-Kosrae State Agriculture station and two private farms in Chuuk and Pohnpei
- Conduct feeding trials at each farm until the growing-finishing groups reach a market weight of 150 pounds
- Analyze an experimental formulated ration of fermented breadfruit for crude protein, energy, phosphorus, calcium and fat
- Compare the growth rate, feed conversion and body condition of pigs fed the experimental ration with those fed the control ration, which constitutes the current diet of imported commercial feed, at both Pohnpei and Chuuk
- Compare the price of each ration type at both Pohnpei and Chuuk

As of fall 2007, these activities had been conducted:

- 700 pounds of breadfruit had been stored for feeding, with storage at project sites in Pohnpei and Chuuk
- Identification tags, scales and equipment had been ordered
- A 50% feed supplement had been identified and ordered

Results:

Results of the first year's activities will be available in early 2008.



Breadfruit mash in storage bags, where it is sealed for an extended period

Potential Benefits:

The project will shed more light and information on how to be more effective in utilizing excess breadfruit during the full season, which will help producers save on the cost of expensive imported feeds.

All island cultures have a history of preserving breadfruit for human consumption during off seasons and for food security. These islands normally experience an overabundance of breadfruit during the main seasons, but they lose a large portion of the late-season fruit to diseases and fruit fly infestations. Instead of risking crop loss, storing the breadfruit out of season and preserving it in the traditional pit fermentation system will allow producers to use it as pig feed.



Breadfruit after three months of fermentation