

# Taro Varieties in the CNMI

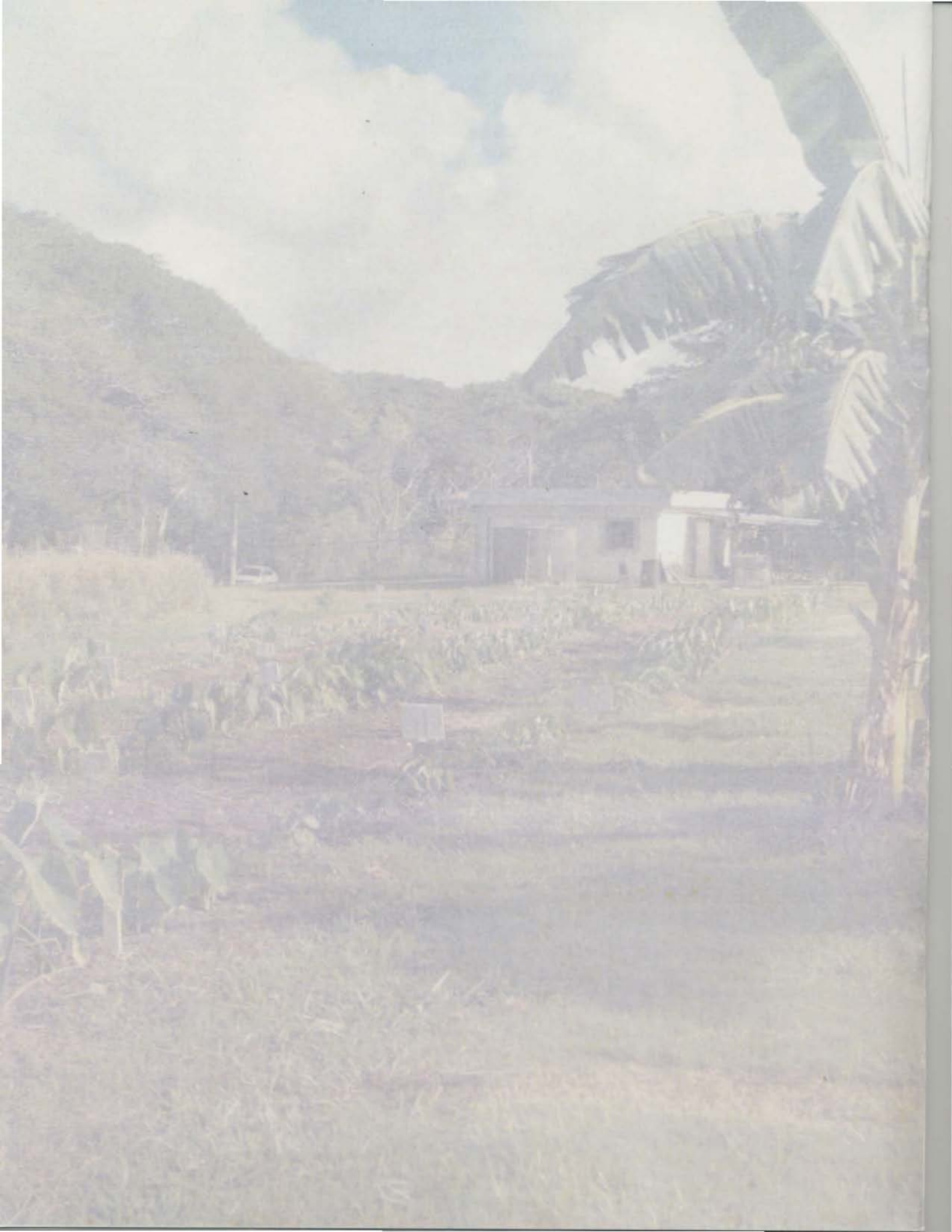
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USDA



**ADAP**  
PROJECT

Agricultural Development in the American Pacific  
Pacific Land Grant Programs





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Information in this booklet is provided as general advice only.  
For application in specific cases, contact your  
NMC-CREES Extension Agent

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Publication #01/2010**

**Funding for this project was provided by  
a Hatch Grant #NMA 02 (Root Crops)  
from USDA-National Institute for Food and Agriculture**



**Additional funding was provided by  
Agricultural Development in the American Pacific**

USDA 2009-38826-19927

## Introduction

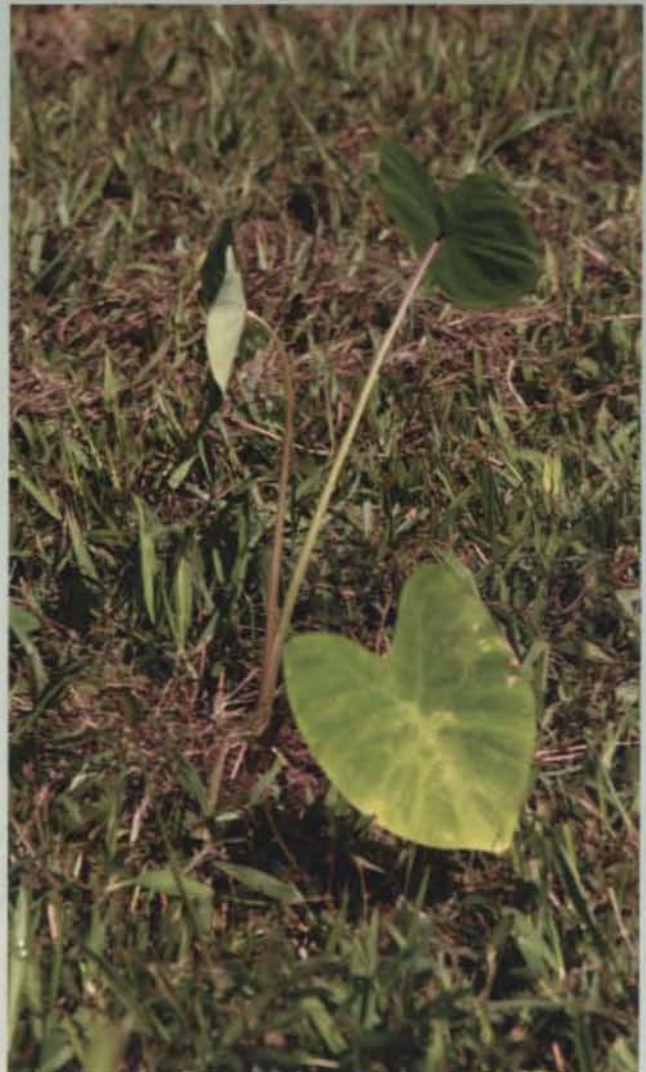
Taro has been a staple food for Pacific islanders for centuries, and is the second most produced crop in the CNMI. It is very important to a healthy nutrition based on its high contents of fibrous starches, potassium, iron, calcium, and several vitamins. Being ingrained into the islands' culture for so long, there are many ways to prepare a meal from taro. The corm can be baked, roasted or boiled. The leaves are used as a replacement for spinach. Taro can be grown in a back yard, as well as on a commercial farm. About 50% of commercially produced taro on Rota is exported to Guam (~3,000 lbs/week).

However, there are serious constraints to taro cultivation: High production cost due to increased labor and management, spread of soil born diseases and pests, limited genetic diversity and shortage of quality planting material. To meet the challenges in taro cultivation, Northern Marianas College's Cooperative Research, Extension and Education Service (NMC-CREES) initiated a tissue culture program on taro for the production of disease free and quality propagating materials. After screening accessions on the Agriculture Experiment Station and on-farm trials, selected lines were propagated through tissue culture and distributed to the local farming community. This booklet reports the results of the field evaluations of tissue cultured taro accessions in the local soil and climatic conditions of the CNMI.

## Growing Taro

Taro can be grown throughout the year in the CNMI. It is well adapted to our warm and moist climate. Irrigation will be needed during the dry season. It grows best in deep, well drained friable loam with a pH of 5.5-6.5. After tilling the plot, add fertilizer (16:16:16 - one half cup per plant) while planting the seedlings. After one month apply another half cup of 16:16:16 per plant. Taro can be planted on ridges, in furrows or on flat ground. It can also be planted in a no-till environment. Plant seedlings every 18-24" in rows 18-24 inches apart.

Weeds have to be controlled the first 3-4 months of the growth cycle. After 7-9 months, depending on the variety, taro is ready to be harvested.



Taro planted in an un-tilled field



## Pests and diseases

Most common pests for taro are the taro hornworm, plant hoppers, red-banded thrips, aphids, ants and leaf spot. They can be treated by commercially available pesticides or extracts of neem which is propagated by NMC-CREES. For the treatment of leaf spot a fungicide is needed.

Dasheen mosaic virus, Phytophthora leaf blight, taro leaf blight or stem rot, leaf mold, and soft rot of tubers are the common diseases in the CNMI. No serious problems with insect pests and diseases were observed on NMC-CREES' planting materials.

Before applying chemicals, make sure you read and understand the labels. If you have any questions about insect pests and their treatment, feel free to contact NMC-CREES Entomology Lab at 234-5498 ext. 1432, or ask your NMC-CREES Extension Agent.



Damage from Chinese Rose Beetle



Taro attacked by Aphids



Pythium Corm Rot



*Tarophagus sp.*



Nutrient Deficiency





Army Worm



Taro Leaf Blight



*Leptosphaerulina trifolii*

Photos courtesy of Dr. Fred Brooks



Taro Tissue Cultures on growth medium



Hardened tissue culture plants in the nursery

### Tissue Culture (Micro Propagation)

To obtain the best results, NMC-CREES used tissue cultures of plant material from the Center of Pacific Crops and Trees (CePCT) of the Secretariat of the Pacific Community (SPC). This material was proven to be tolerant to insect pest and diseases and with superior agronomic characteristics.

NMC-CREES multiplied this material in its Tissue Culture Lab, propagated and distributed tissue cultured plants to the farming community throughout the CNMI.

Tissue Culture basically means that a taro plant is produced in the laboratory by growing corm tips on a growth medium in a closed (sterilized) container kept in a controlled environment. After a while, taro shoots develop, harden in a greenhouse to be finally transplanted in the field.





## Taste Test

NMC-CREES did field trials on 23 different taro varieties originating from and tested in different Pacific islands. The trials helped to find the best taro varieties, based on growth, yield and disease and pest resistance. However, the best growing taro will be worthless if it doesn't find acceptance by the consumers. Therefore, NMC-CREES conducted three taste test events on the islands of Rota, Tinian and Saipan. About 100 participants - students, NMC staff and faculty - took part in the taste testing.

Agronomic data listed on the following pages are the average of at least 12 plants of each variety.

*Results may vary based on farm location, soil and climatic conditions.*





**var. Tsuronoko (CA/JP-01)**

*Colocasia esculenta* var. *antiquorum*

<b>Origin:</b>	<b>Japan</b>
<b>Avg. Corm Weight (lb):</b>	<b>0.2</b>
<b>Yield/Plant (lb):</b>	<b>1.5</b>
<b>Corm Size:</b>	<b>2"</b>
<b>Plant Height:</b>	<b>12"</b>
<b>Maturing:</b>	<b>7-8 mo.</b>



<b>Leaf Color:</b>	<b>Green</b>
<b>Petiole Color:</b>	<b>Green</b>
<b>Flesh Color:</b>	<b>White-Cream, Purple Base</b>
<b>Texture:</b>	<b>Soft, Moist</b>
<b>Taste:</b>	<b>Best</b>
<b>Edibility:</b>	<b>Favorable</b>

**Insect Pests: Taro Hornworm**





**var. Akame (CA/JP-06)**

*Colocasia esculenta* var. *antiquorum*

**Origin:** Japan  
**Avg. Corm Weight (lb):** 0.7  
**Yield/Plant (lb):** 2.0  
**Corm Size:** 2"  
**Plant Height:** 12"  
**Maturing:** 7-8 mo.



**Leaf Color:** Dark Green  
**Petiole Color:** Purple-Green  
**Flesh Color:** White-Cream  
**Texture:** Soft, Moist  
**Taste:** Best  
**Edibility:** Favorable

**Insect Pests:** Taro Hornworm





**var. Takenoko-Imo (CA/JP-08)**

*Colocasia esculenta* var. *antiquorum*

**Origin:** Japan  
**Avg. Corm Weight (lb):** 0.2  
**Yield/Plant (lb):** 1.3  
**Corm Size:** 2"  
**Plant Height:** 12"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Lt. Purple-Dk. Green  
**Flesh Color:** White-Cream  
**Texture:** Moderate hard, Moist  
**Taste:** Best  
**Edibility:** Favorable

**Insect Pests:** Red Spider Mite

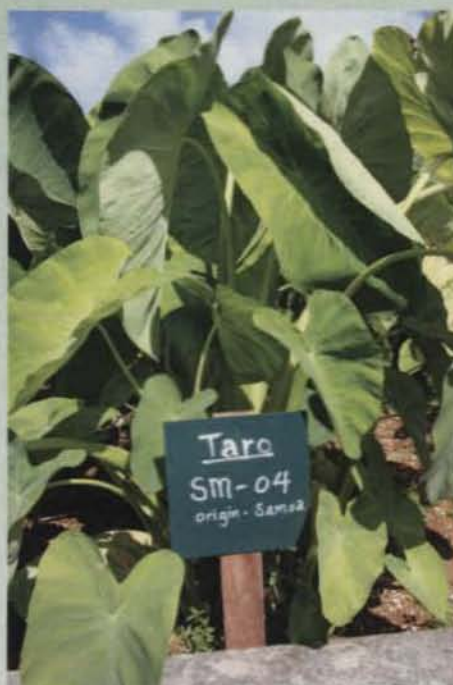




**var. C2-132 (BL/SM/04)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Samoa  
**Avg. Corm Weight (lb):** 1.9  
**Yield/Plant (lb):** 1.9  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Green  
**Flesh Color:** Pale Yellow  
**Texture:** Soft, Moist  
**Taste:** Fair (itchy)  
**Edibility:** Moderately Acceptable



**Insect Pests:** Taro Hornworm  
Aphids  
Red Banded Thrips



**var. C2-234A (BL/SM/12)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Samoa  
**Avg. Corm Weight (lb):** 1.7  
**Yield/Plant (lb):** 1.7  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green/Red Purple Base  
**Petiole Color:** Green  
**Flesh Color:** Lt. Purple  
**Texture:** Hard, Moist  
**Taste:** Good  
**Edibility:** Moderately Favorable



**Insect Pests:** Leaf Spots  
Mealybugs  
Ants



**var. C2-227 (BL/SM/22)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Samoa  
**Avg. Corm Weight (lb):** 1.2  
**Yield/Plant (lb):** 1.2  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Dark Green  
**Flesh Color:** White-Cream  
**Texture:** Hard, Moist  
**Taste:** Good  
**Edibility:** Acceptable

**Insect Pests:** Taro Hornworm  
Plant Hopper



**var. C3-7 (BL/SM/13)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Samoa  
**Avg. Corm Weight (lb):** 1.4  
**Yield/Plant (lb):** 1.4  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green/Purple Base  
**Petiole Color:** Green  
**Flesh Color:** White-Cream, Purple  
**Texture:** Hard, Dry  
**Taste:** Good  
**Edibility:** Acceptable



**Insect Pests:** N/A



**vr. C3-167A (BL/SM/47)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Samoa  
**Avg. Corm Weight (lb):** 2.0  
**Yield/Plant (lb):** 2.0  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green/Red-Purple Base  
**Petiole Color:** Green  
**Flesh Color:** Light Purple  
**Texture:** Dry  
**Taste:** Good (itchy)  
**Edibility:** Acceptable

**Insect Pests:** Plant Hopper  
Chinese Rose Beetle



**var. MAL 136 (TAN/MAL/07)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Malaysia  
**Avg. Corm Weight (lb):** 0.6  
**Yield/Plant (lb):** 0.9  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Dk. Green/Purple  
**Flesh Color:** White-Cream  
**Texture:** Hard, Moist  
**Taste:** Good (itchy)  
**Edibility:** Acceptable



**Insect Pests:** N/A



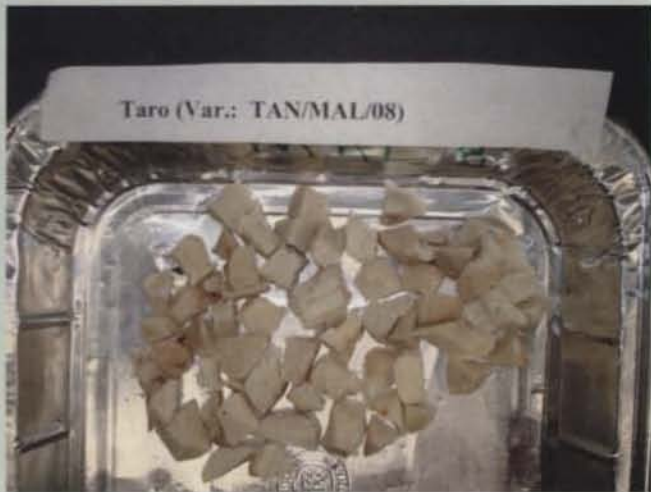
**var. MAL 141 (TAN/MAL/08)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Malaysia  
**Avg. Corm Weight (lb):** 1.0  
**Yield/Plant (lb):** 1.0  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green/Purple Base  
**Petiole Color:** Green  
**Flesh Color:** Pale Yellow  
**Texture:** Hard, Moist  
**Taste:** Fair (itchy)  
**Edibility:** Acceptable



**Insect Pests:** N/A



**var. MAL 148 (TAN/MAL/12)**

*Colocasia esculenta* var. *esculenta*

<b>Origin:</b>	Malaysia
<b>Avg. Corm Weight (lb):</b>	1.7
<b>Yield/Plant (lb):</b>	1.7
<b>Corm Size:</b>	4"
<b>Plant Height:</b>	36"
<b>Maturing:</b>	7-8 mo.



<b>Leaf Color:</b>	Green/Red-Purple Base
<b>Petiole Color:</b>	Green
<b>Flesh Color:</b>	Yellow
<b>Texture:</b>	Dry
<b>Taste:</b>	Good
<b>Edibility:</b>	Moderately Favorable

**Insect Pests:** Red Spider Mites  
Plant Hoppers





**var. IND 245 (TAN/IND/13)**

*Colocasia esculenta* var. *esculenta*

<b>Origin:</b>	<b>Indonesia</b>
<b>Avg. Corm Weight (lb):</b>	<b>1.0</b>
<b>Yield/Plant (lb):</b>	<b>1.0</b>
<b>Corm Size:</b>	<b>4"</b>
<b>Plant Height:</b>	<b>36"</b>
<b>Maturing:</b>	<b>7-8 mo.</b>



<b>Leaf Color:</b>	<b>Dark Green</b>
<b>Petiole Color:</b>	<b>Green/Purple</b>
<b>Flesh Color:</b>	<b>Pale Yellow</b>
<b>Texture:</b>	<b>Hard, Moist</b>
<b>Taste:</b>	<b>Good</b>
<b>Edibility:</b>	<b>Moderately Favorable</b>

**Insect Pests:** Plant Hoppers  
Scale  
Ants



**var. IND 399 (TAN/IND/19)**

*Colocasia esculenta* var. *esculenta*

<b>Origin:</b>	Indonesia
<b>Avg. Corm Weight (lb):</b>	1.0
<b>Yield/Plant (lb):</b>	1.0
<b>Corm Size:</b>	4"
<b>Plant Height:</b>	36"
<b>Maturing:</b>	7-8 mo.



<b>Leaf Color:</b>	Green/Purple Base
<b>Petiole Color:</b>	Green
<b>Flesh Color:</b>	White-Cream
<b>Texture:</b>	Hard, Dry
<b>Taste:</b>	Good
<b>Edibility:</b>	Acceptable



**Insect Pests:** N/A

Taro (var. Tan/IND 19, Tissue Culture)



**var. IND 400 (TAN/IND/20)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Indonesia  
**Avg. Corm Weight (lb):** 0.7  
**Yield/Plant (lb):** 0.7  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Light Purple  
**Flesh Color:** Yellow  
**Texture:** Soft, Moist  
**Taste:** Good  
**Edibility:** Acceptable

**Insect Pests:** Taro Hornworm  
Redbanded Thrips  
Ants



**var. IND 472 (TAN/IND/23)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Indonesia  
**Avg. Corm Weight (lb):** 0.6  
**Yield/Plant (lb):** 0.7  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Light Purple  
**Flesh Color:** Yellow  
**Texture:** Moderately Hard, Moist  
**Taste:** Good  
**Edibility:** Acceptable



**Insect Pests:** Taro Hornworm



**var. PH 038 (TAN/PHL/02)**

*Colocasia esculenta* var. *esculenta*

<b>Origin:</b>	Philippines
<b>Avg. Corm Weight (lb):</b>	0.5
<b>Yield/Plant (lb):</b>	1.0
<b>Corm Size:</b>	4"
<b>Plant Height:</b>	36"
<b>Maturing:</b>	7-8 mo.



<b>Leaf Color:</b>	Green
<b>Petiole Color:</b>	Red-Purple
<b>Flesh Color:</b>	Dark Purple
<b>Texture:</b>	Soft, Dry
<b>Taste:</b>	Good
<b>Edibility:</b>	Acceptable

**Insect Pests:** Taro Hornworm  
Aphids



**var. PH 055 (TAN/PHL/05)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Philippines  
**Avg. Corm Weight (lb):** 0.5  
**Yield/Plant (lb):** 0.6  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Red-Purple  
**Flesh Color:** Pale Yellow  
**Texture:** Hard, Dry  
**Taste:** Good  
**Edibility:** Acceptable



**Insect Pests:** Leaf Spots  
Aphids



**var. PH 164 (TAN/PHL/15)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Philippines  
**Avg. Corm Weight (lb):** 0.8  
**Yield/Plant (lb):** 0.8  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Dark Green  
**Petiole Color:** Red-Purple  
**Flesh Color:** Pale Yellow  
**Texture:** Hard, Dry  
**Taste:** Good  
**Edibility:** Moderately Acceptable

**Insect Pests:** Aphids  
Ants



**var. C2-E3 (BL/PNG/03)**

*Colocasia esculenta* var. *esculenta*

**Origin:** PNG  
**Avg. Corm Weight (lb):** 0.9  
**Yield/Plant (lb):** 1.5  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Dk. Green/Green-Pink Base  
**Petiole Color:** Green  
**Flesh Color:** Light Purple  
**Texture:** Soft, Moist  
**Taste:** Good  
**Edibility:** Moderately Acceptable

**Insect Pests:** Taro Hornworm  
Chinese Rose Beetle  
Aphids  
Red Spider Mites  
Negro Bug





**var. C2-E8 (BL/PNG/06)**

*Colocasia esculenta* var. *esculenta*

**Origin:** PNG  
**Avg. Corm Weight (lb):** 1.1  
**Yield/Plant (lb):** 1.1  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Purple  
**Flesh Color:** Purple  
**Texture:** Soft, Moist  
**Taste:** Good (Flavor)  
**Edibility:** Moderately Favorable

**Insect Pests:** Chinese Rose Beetle  
Aphids



**var. C2-E11 (BL/PNG/08)**

*Colocasia esculenta* var. *esculenta*

**Origin:** PNG  
**Avg. Corm Weight (lb):** 1.5  
**Yield/Plant (lb):** 1.5  
**Corm Size:** 4"  
**Plant Height:** 36"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Purple  
**Flesh Color:** White-Cream/Purple  
**Texture:** Soft, Moist  
**Taste:** Good  
**Edibility:** Acceptable



**Insect Pests:** Taro Hornworm  
Leaf Spots  
Ants



**var. MH 24 (BL/HW/12)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Hawaii  
**Avg. Corm Weight (lb):** 1.3  
**Yield/Plant (lb):** 1.3  
**Corm Size:** 2.5"  
**Plant Height:** 18"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Dk. Green/Purple  
**Flesh Color:** Dark Purple  
**Texture:** Moderately Hard, Fibrous  
**Taste:** Good  
**Edibility:** Acceptable



**Insect Pests:** Taro Hornworm  
Ants



**var. MH 40 (BL/HW/26)**

*Colocasia esculenta* var. *esculenta*

**Origin:** Hawaii  
**Avg. Corm Weight (lb):** 1.8  
**Yield/Plant (lb):** 1.8  
**Corm Size:** 2.5"  
**Plant Height:** 18"  
**Maturing:** 7-8 mo.



**Leaf Color:** Green  
**Petiole Color:** Green  
**Flesh Color:** Light Purple  
**Texture:** Dry (Prickly Sensation)  
**Taste:** Good  
**Edibility:** Acceptable

**Insect Pests:** Taro Hornworm  
Leaf Spots





# Acknowledgement

Authors gratefully acknowledge valuable assistance and help from following individuals, groups and organizations:

## **Admin Support:**

Ross S. Manglona, Director, CREES

Bonnie T. Royal, CREES Admin. Manager and team

## **Taste Testing:**

Margarate Tudela and team, Community Development Program, CREES

Polly Omechelang, CREES 4 H, Saipan

Patricia Coleman and Rose Castro, CREES EFNEP

Dr Jang Ho Kim, Food Scientist, CREES

Lee Bowen

## **Insect Pest Scouting:**

Arnold Route, Pesticide Safety Education Coordinator, CREES

## **Island Counterpart in Variety Trials:**

### **Rota:**

Alijendro Bedilles, IPM Coordinator, CREES

Pedro Manibusan, CREES

Felix Calvo

### **Tinian:**

Lawrence Duponcheel, 4-H Coordinator, CREES

Jacob Muna, Extension Aid, CREES

## **Technical Assistance:**

Isidoro Cabrera

Petrus "Rush" Faimau, Research Assistant, CREES

Alfred Paras

## **Participating Farmers:**

Islaam Paeda, Rota

Maria Manglona, Rota

Diego Songao, Rota

Joe Atalig, Tinian

Mike Aguon, Tinian

Asap Ogumoro, Saipan

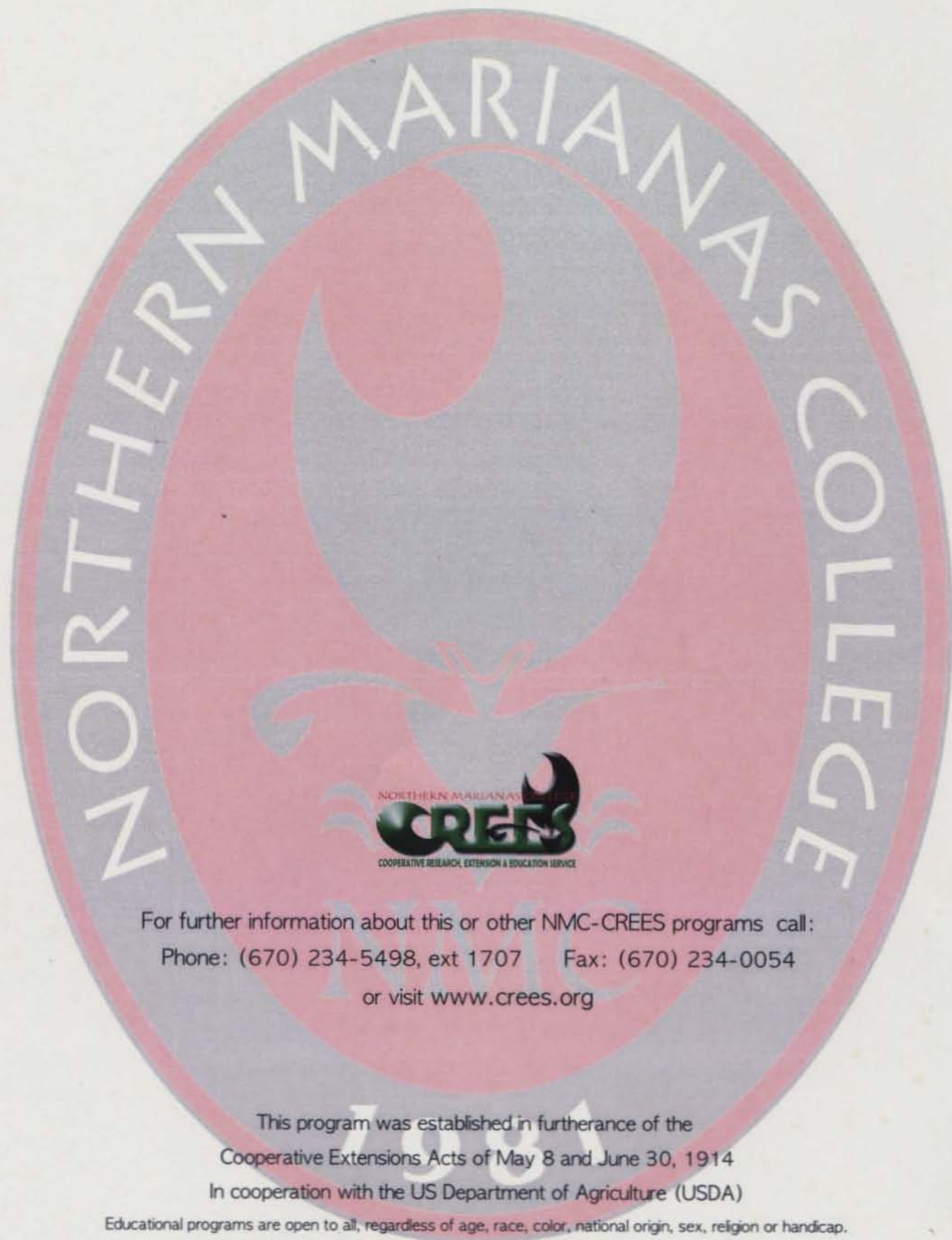
## **Literature Support**

Dr. Eileen Herring, Librarian, UOH Manoa Library

## **Supply of Taro Germplasm:**

Dr. Mary Taylor, Manager, CePCT, SPC, Fiji

Valerie Tuia, Curator, CePCT, SPC, Fiji



For further information about this or other NMC-CREES programs call:

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or visit [www.crees.org](http://www.crees.org)

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Cooperative Extensions Acts of May 8 and June 30, 1914  
In cooperation with the US Department of Agriculture (USDA)

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