Taro Varieties in the CNMI

Dilip Nandwani and Anthony Tudela
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Information in this booklet is provided as general advice only.
For application in specific cases, contact your
NMC-CREEES Extension Agent

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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.
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.
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

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

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

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

Origin: Malaysia
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: Yellow
Texture: Dry
Taste: Good
Edibility: Moderately Favorable

Insect Pests: Red Spider Mites
Plant Hoppers
var. IND 245 (TAN/IND/13)

Colocasia esculenta var. esculenta

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

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

Insect Pests: Plant Hoppers
Scale
Ants
var. IND 399 (TAN/IND/19)

Colocasia esculenta var. esculenta

Origin: Indonesia
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: White-Cream
Texture: Hard, Dry
Taste: Good
Edibility: Acceptable

Insect Pests: N/A
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.

Insect Pests: Taro Hornworm

Leaf Color: Green
Petiole Color: Light Purple
Flesh Color: Yellow
Texture: Moderately Hard, Moist
Taste: Good
Edibility: Acceptable
var. PH 038 (TAN/PHL/02)
Colocasia esculenta var. esculenta

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

Leaf Color: Green
Petiole Color: Red-Purple
Flesh Color: Dark Purple
Texture: Soft, Dry
Taste: Good
Edibility: 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*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin</td>
<td>PNG</td>
</tr>
<tr>
<td>Avg. Corm Weight (lb)</td>
<td>1.5</td>
</tr>
<tr>
<td>Yield/Plant (lb)</td>
<td>1.5</td>
</tr>
<tr>
<td>Corm Size</td>
<td>4&quot;</td>
</tr>
<tr>
<td>Plant Height</td>
<td>36&quot;</td>
</tr>
<tr>
<td>Maturing</td>
<td>7-8 mo.</td>
</tr>
</tbody>
</table>

- **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
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