



# Dukduk

## *Artocarpus mariannensis*

Native Plants of Guam

**D**ukduk is a large breadfruit tree which is thought to be endemic to the Mariana Islands. It can be found in limestone areas and usually stands out in limestone forests. The wood and other parts of the tree were once important in canoe building.

**Other Common Names:** Chebiei, Dokdok, Dugdug, Ebiei, Mai, Maifai, Maiyah, Marianas breadfruit, Meduuliou, Mei chocho, Mei kole, Meiyas, Mejwaan, Mos en kosrae, Seeded breadfruit, Sowing, Te mai, Ulu elihe, Ulu elise

**Synonyms:** None

**Family Name:** Moraceae

### Plant Appearance

**Distinctive feature:** Dukduk leaves are generally smaller and not as deeply lobed as Lemmai (seedless breadfruit) leaves. Dukduk fruit has seeds and are more kidney shaped than Lemmai fruit.

#### Leaf

**Shape:** Broadly obovate to elliptic, shallowly 1-3 lobed on the upper third of blade

**Arrangement:** Alternate

**Type:** Simple

#### Flower

**Size:** Up to 1.2 in. in diameter and 3-4.7 in. long

**Color:** All flowers are yellowish, but male flowers turn brown while female flowers turn green.

**Shape:** Male flowers are cylindrical or club-shaped spike, while female flowers are rounded or elliptic.

**Arrangement:** Monoecious. Male flowers appear first; thousands of tiny flowers are attached to the spongy core. Female flowers are also attached to the spongy core and the flowers fuse



Dukduk flower<sup>a</sup>.



Dukduk leaf<sup>b</sup>.



Dukduk fruit<sup>a</sup>.



Dukduk seeds<sup>a</sup>.



Dukduk seedlings<sup>a</sup>.

together to form the fleshy edible part of the fruit.

**Flowering period:** July through September

*Habit*

**Typical height:** 25-65 ft.

*Fruit*

**Type:** Fleshy syncarp

**Size:** About 6 in. long

**Color:** Dark green

**Number of seeds:** Up to 15 large, dark brown shiny seeds about 0.6 in. long.

**Edible:** Mature fruits can be eaten raw but are usually boiled, roasted, or baked. Seeds, called “hutu” when cooked, are high in protein, carbohydrates, and a good source of minerals and vitamins, especially vitamin A.

## Growing Your Own

### PROPAGATION

**Form:** Seed, seedlings

**Seed collection:** Collect from mature healthy fruits. Occasionally, seedlings can be gathered from beneath fruiting trees.

**Seed treatment:** Clean seeds in a 2% bleach solution for 5-10 minutes or treat with a fungicide.

**Germination time:** 10-14 days

**Planting depth:** Twice the width of the seed

**Pre-planting:** Sprouts from pots should be transplanted into individual pots soon after germination. Plants grown in 1 gallon pots should be transplanted into the ground after 4 months.

**Special hints:** Irrigation for the first 1-3 months of outplanting is necessary.

**Pollinators:** Honeybees, fruit bats, native doves, and other birds in the Pacific islands.

## Production Conditions

**pH value:** 6.1-7.4

**Water:** Low

**Salt tolerance:** High

**Wind tolerance:** High

**Soil characteristics:** Light, well-drained soils (sandy, sandy loam or loam), volcanic, and calcareous soils

**Light:** Partial shade (20-50%)

**Space requirement:** 10-40 ft.

**Growth rate:** 1-3 ft. per year

**Growth direction:** Upright, spreading

**Fertilizer:** Small amount of slow-release fertilizer such as 8-8-8 should be added to the bottom of the hole during planting. Mulching young plants is also beneficial.

**Pruning:** Removal of dead and dying branches is essential to maintain health and vigor.

## Risks

**Near surface roots:** Roots spread and grow on or slightly below the surface

**Limb breakage:** High

**Special considerations:** Shallow-rooted trees may topple during high winds. Small branches often die back at the tip after fruiting but new shoots and branches continue to develop throughout the life of the tree. This tree drops leaves and fruit.

**Pests:** Other than termites, Dukduk has little susceptibility to fruit rots caused by *Phytophthora*, *Colletotrichum* (anthracnose), and *Rhizopus*. *Phellinus noxius*, a root rot, can also be a problem when trees are planted in recently cleared areas.

## How to Use This Plant

Dukduk is moderately fast growing in favorable conditions and is usually associated with tall native-canopy and secondary forests. The tree is important in the Chamorro culture for food, medicine, and wood.

**Agroforestry:** Soil stabilization, soil improvement, intercropping, overstory, shade, ornamental, bee for age, host plant trellising

**Wildlife:** Food for fruit bats, native doves, and other birds

**Medicinal:** The latex is used to treat broken bones and sprains, or taken diluted to treat intestinal issues. Crushed leaves treat skin ailments and fungus diseases. Sap from leaf stalks

treats ear infections or sore eyes, while roots are used as astringents or in poultices. The bark is used to treat headaches.

**Other uses:** Timber, canoe-building, carving, gum or resin (adhesive), fuelwood, fiber/weaving/clothing, cordage, insect repellent, food preparation

## References and Resources

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- Raulerson, L. and A. Rinehart. 1991. Trees and Shrubs of the Northern Mariana Islands. Coastal Resources Management, Office of the Governor, CNMI. 120p.
- [www.traditionaltree.org](http://www.traditionaltree.org)
- [www.worldagroforestry.org](http://www.worldagroforestry.org)

### Photo Credits

- a. Forestry & Soil Resources Division, Guam Department of Agriculture
- b. Christine Bucayu-Laurent

### Contributors

Joseph Tuquero, Christine Bucayu-Laurent, Adrienne Loerzel, Devin Frazier, and Thera Santos.

### Acknowledgements

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### Notes

This publication is an update of: Joseph Tuquero, Devin Frazier, and Thera Santos. 2007. *Dokduk/Dukduk*. Guam Department of Agriculture. 2pp.

### For Further Information

Forestry & Soil Resources Division  
Guam Department of Agriculture  
Phone: (671) 735-3949/51  
Fax: (671) 734-0111  
163 Dairy Rd, Mangilao, Guam 96913  
<http://forestry.guam.gov/>