



# ETHNOBOTANY



# Welcome!

Welcome to Fairchild Tropical Botanic Garden. Established in 1936, the Garden is an 83-acre botanical and cultural institution, which promotes the understanding, conservation, use, and enjoyment of tropical plants. It is named in honor of Dr. David Fairchild, the world-renowned plant explorer and economic botanist, author, and founder of the U.S., Department of Agriculture's Foreign Seed and Plant introduction Section. Fairchild's mission is to save tropical plant diversity by exploring, explaining, and conserving the world of tropical plants; fundamental to this task is inspiring a greater knowledge of and love for plants and gardening so that all can enjoy the beauty and bounty of the tropical world.

**We ask that you please read the following rules to your group before you begin your tour:**

- Stay with your group during your entire visit.
- Respect our wildlife; do not touch, chase, or feed the animals.
- Walk only on designated paths or grass.
- Do not climb trees or pick flowers or fruits from plants.
- Keep your voices low to respect other guests.
- Self-guided groups are not allowed at the Garden Cafe, in the Gift Shop or on the Tram.

This booklet was designed as a guide to help you navigate the Garden and introduce students to the field of Ethnobotany, the study of how people around the world use plants. The guide includes a walking tour of the Garden, highlighting plants with ethnobotanical value, and focusing on plants native to Florida and the Caribbean basin; a brief background of ethnobotany; and several educational activities.

Plants are for display purposes only and not for consumption. This information is meant for historical and educational purposes only, and Fairchild does not endorse the use of any of the plants listed in this booklet. Consult with a physician before consuming any plants for medicinal purposes.

In your backpack, you will find the materials needed for this program. Before leaving the Garden, we ask you to please ensure that all the materials are back in this backpack. At the end of your visit, return this backpack to the Visitor Center. If any materials are lost or damaged, the cost will be deducted from your deposit.

## **ACTIVITY SUPPLIES:**

- 6 Ethnobotany Program booklets
- *24-Hour Plant Inventory* worksheets
- *Ethnobotany Connections* worksheets
- *South Florida Survivors* worksheets
- Clipboards

We hope you enjoy your visit to Fairchild and find this guide a helpful educational tool. Please do not hesitate to ask a staff person or volunteer for help in navigating the garden or if you have questions.

# Get Started

1. Review the ethnobotany introduction, vocabulary list and the *Ethnobotany Plant Trail* map included in this booklet.
2. Using the map, begin navigating the Garden and identifying the plants highlighted in the *Walking Trail Plant Guide*.
3. While there, read the plant description to the rest of the group.
4. Once you have finished walking the *Ethnobotany Plant Trail*, complete the ethnobotany brainstorming activities and the corresponding worksheets.

## **Before leaving the Garden, don't forget to:**

1. Look for the survey that is inside the backpack. Your feedback is appreciated and it helps us improve our program! Please make sure to complete the survey and put it back in the program backpack.
2. Return the backpack to the Visitor Center entrance where you picked it up.

## **Program Objectives**

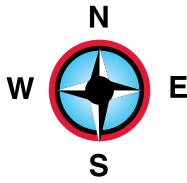
- Students learn what ethnobotany is and its significance.
- Students become familiar with the importance of plants.
- Students identify plants with ethnobotanical significance.
- Students use navigational tools to navigate a natural area.

# Ethnobotany Plant Trail

## SERVICES

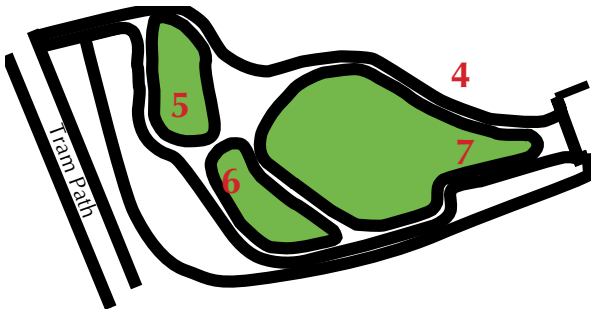
-  Information
-  Water Fountain
-  Restrooms
-  Food & Beverage
-  Chickee Hut
-  Tram Stop
-  Tram Path
-  Vistas
-  Walking Path

*Not available for self-guided groups*





## Butterfly Garden Inset



# Introduction

## What is Ethnobotany?

Ethnobotany is the study of how people around the world use plants in their lives, both historically and in modern day times. “Ethno” refers to people, while “botany” is the study of plants. Plants have many significant uses, including use as medicine, food, shelter, tools, transportation, and for religious purposes, just to name a few. Ethnobotany is closely related to cultural anthropology, which studies human cultures, behaviors, language, and their views on the world.

## Why is Ethnobotany important?

Studying how people use plants can provide valuable information across a number of disciplines, including anthropology, biology, human health, international relations, and sociology. Research in ethnobotany can lead to new discoveries in medicine, best land-use management practices, and improved conservation policies, among other benefits. Ethnobotanists may work for international organizations, government agencies, universities, or private industry such as pharmaceutical companies.

## What methods are used in Ethnobotany?

Ethnobotanists often use observation skills, knowledge of various languages and cultures, interview techniques, plant data collection, and laboratory analysis to conduct their research.

## What background do Ethnobotanists have?

Often, ethnobotanists are scientists who hold a PhD in Ethnobotany or a related field such as Anthropology, Linguistics, Botany, or Biology.

## How can Ethnobotany be used in the classroom?

The study of Ethnobotany can serve as a springboard to study many different disciplines across the curriculum. (See additional activities section).



Dr. Mark Plotkin of the Amazon Conservation Team discussing plant medicines with Shaman of the Trio tribe, Suriname-Brazil border. Photo courtesy of the Amazon Conservation Team.

# Vocabulary

**Aerial Roots:** a root that arises above soil level.

**Bark:** the dry superficial covering of trunk, branches, stems and roots of trees, shrubs, and other woody plants. It is very different and separable from the wood itself.

**Berry:** fleshy fruit, with succulent pericarp (fruit wall).

**Bud:** immature vegetative or floral shoot or both, often covered by scales.

**Ethnobotany:** the scientific study of the relationships that exist between people and plants.

**Flower:** the seed-bearing part of a plant.

**Fruit:** the product of a plant that contains one or more seeds.

**Leaf:** chlorophyll-bearing lateral outgrowth from stem

**Leaf Arrangement:** the arrangement of leaves on a plant stem.

**Leaf Shape:** any of the various shapes that leaves of plants can assume.

**Mangrove:** a shrub or small tree growing in salt or brackish water and often with pneumatophores or aerial roots.

**Resin:** hardened exudate from wounded stem or leaves that is soluble in alcohol but not in water.

**Root:** an absorbing and anchoring organ, usually initially developed from the radicle and growing downward.

**Sap:** the watery fluid that circulates through the vascular system of a plant, carrying mineral salts, sugars, and other nutrients to the various tissues.

**Shrub:** a woody perennial plant usually less than 20 feet tall and often with several woody stems rather than a single trunk.

**Starch:** the most abundant and important reserve polysaccharide (long carbohydrate molecules) in plants.

**Stem:** the part of the plant axis that is usually above ground and bears the leaves, reproductive parts, and buds.

**Tannin:** astringent, bitter plant polyphenolic compound that binds to and precipitates proteins and various other organic compounds including amino acids and alkaloids.

**Terminal Bud:** the primary growing point located at the apex (tip) of the stem.

**Tree:** a woody perennial (living for multiple years) plant, typically having a single trunk growing to a considerable height and bearing lateral branches at some distance from the ground.



# Walking Trail Plant Guide

**1. Bay Rum** (*Pimenta racemosa*): Used in shampoos, soaps, and colognes; is said to treat stomach ache and colic. (Plot 46, Arboretum)

**2. Simpson's Stopper** (*Myrcianthes fragrans*): Is said to treat diarrhea, fever, aches, flu, and labor pains; used in blowgun darts. (Plot 46, Arboretum)

**3. Lignum Vitae** (*Guaiacum sanctum*): A tea made from the leaves treats rheumatism, asthma, high blood pressure, and diabetes; the bark, wood, and resin are said to treat gout and rheumatism; the resin soaked in rum is used as a gargle for sore throats or applied to cuts and bruises; was used as the first penicillin to cure malaria; one of the densest woods for construction and tools. (Plot 37, Arboretum)

**4. Limber Caper** (*Capparis flexuosa*): Ends of small branches can be chewed to brush teeth, and fibers from branches can be used as floss. (Plot 19B, Butterfly Garden)





# Walking Trail Plant Guide

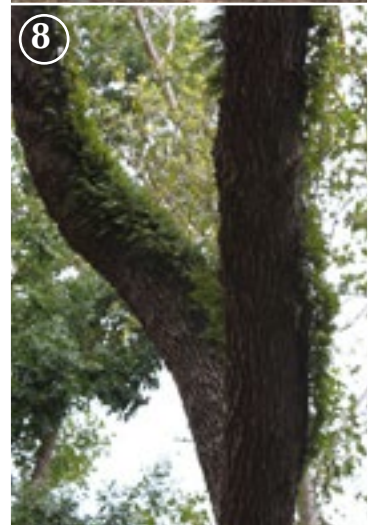
**5. Beauty Berry** (*Callicarpa americana*): Has microbial and antiviral properties; historically used to treat malaria, measles, and polio; may help treat skin cancer. (Plot 19B, Butterfly Garden)

**6. Indigo Berry** (*Randia aculeata*): Berries and flowers used as dye; astringent. (Plot 19B, Butterfly Garden)

**7. Coontie** (*Zamia pumila*): Native Americans made a flour from the starchy underground stem; however this plant is poisonous if not prepared properly. (Plot 19B, Butterfly Garden)

**8. Live Oak** (*Quercus virginiana*): Wood is used for construction, fuel, and tools; bark and leaves used as dye; antiviral, antiseptic; edible acorns. (Plot 21, Hardwood Hammock)

**9. Gumbo Limbo** (*Bursera simaruba*): Boiled bark and leaves are said to treat fever, low blood pressure, and bee and wasp stings; antidote for poison wood and poison ivy; sap can serve as resin or glue and was used historically to trap songbirds to sell and trade them; wood used to make carousel horses. (Plot 21, Hardwood Hammock)





# Walking Trail Plant Guide

**10. Wild Coffee** (*Psychotria nervosa*): Crushed leaves known to stop bleeding and treat fever, colds, stomach ailments, anemia, boils, sores, and hemorrhage; antifungal. (Plot 64, Hardwood Hammock)

**11. Cabbage Palm** (*Sabal palmetto*): Buds and palm heart from terminal bud (growing tip) are edible; stripped leaves are used in Catholic churches on Palm Sunday; thatch used for chickee huts. (Plot 64, Hardwood Hammock)

**12. Strangler Fig** (*Ficus aurea*): Wood used for arrows and bows; aerial roots as cords and fishing lines; latex used in chewing gum and as glue; treats wounds, heart problems, and hernia. (Plot 64, Hardwood Hammock)

**13. Saw Palmetto** (*Serenoa repens*): The fruit and palm heart (terminal bud) are edible; berries used commercially as treatment for enlarged prostate gland, hair loss, and infertility; used by Seminoles for making baskets, brooms, dolls, and fans, and as thatch. The stems yield tannin, and the fiber can be used for wallboard. (Plot 64, Hardwood Hammock)



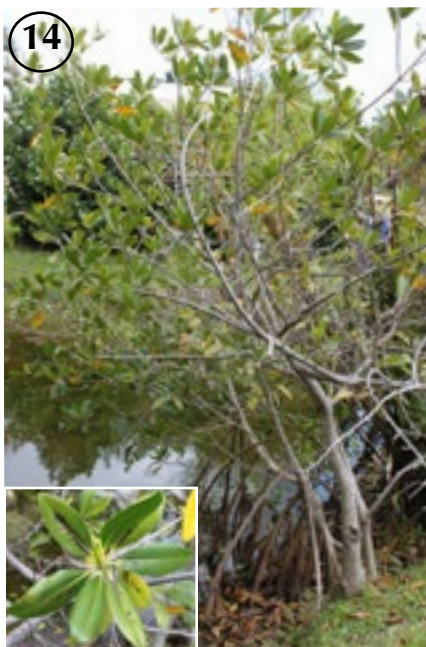
# Walking Trail Plant Guide

**14. Red Mangrove** (*Rhizophora mangle*): Aerial roots used as rope. (Plot 65, Path to Lowlands)

**15. Bald Cypress** (*Taxodium distichum*): Wood used in boats and furniture. (Plot 65, Path to Lowlands)

**16. Black Mangrove** (*Avicennia germinans*): Salt exuded from leaves is edible; tea prepared from bark used to treat ulcers, hemorrhoids, diarrhea, tumors, and rheumatic pain; fruit used as insect repellent. (Plots 156A+ 160 along water on opposite sides of path, Lowlands)

**17. Jamaica Dogwood** (*Piscidia piscipula*): The crushed bark or leaves relieve pain; the dried root bark is said to treat neuralgia, insomnia, hysteria, toothaches, and asthma; indigenous people used the bruised twigs and leaves to stun fish and the fruits for arrow poison to hunt; wood used to make boats, fences, and charcoal. (Plot 164, Lowlands)





# 24-Hour Plant Inventory

Brainstorm how many plants you have used over the last 24 hours (Be creative and think beyond what you ate today!) Use the 24 Hour Plant Inventory Worksheet to make a list of all of the plants or plant products you have used in the last 24 hours (or at least as many as you can think of).

Hint: Think of more than just the vegetables and fruits you've eaten.

<b>Plant Product</b>	<b>Plant</b>	<b>Product Use</b>
1. ___Sugar_____	___Sugar Cane_____	___Sweeten food_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____

# Ethnobotany Connections

Brainstorm various professional fields that are connected with Ethnobotany and how the fields might interact. Use the key below to get your group started and answer questions.

<b>Discipline</b>	<b>Definition</b>	<b>Relevance to Ethnobotany</b>
Agriculture		
Forestry		
Chemistry		
Economics		
Linguistics		
Ecology		
Archeology		
Medicine		
Religious Studies		

# South Florida Survivor

Now that students have learned about some of South Florida native plants and their uses, put their knowledge to the test. Ask students to imagine that they got lost in the wilderness of South Florida during a plant collecting expedition. They must find food, shelter, and medicine from the surrounding habitat. Ask them what plants they would use for the following categories and purposes.

Category	Use/Purpose	Plants
Shelter	To sleep, live, or for protection	
Transport	To navigate water	
	To carry things	
	To tether a boat or attach things	
Food	To eat	
	To cook	
	To hunt	
Medicine	Insect repellent	
	To treat diarrhea	
	To stop bleeding	
	To treat asthma	
	To treat poisonwood rash	
	To treat fever	
Hygiene/ Cosmetic	To brush teeth	
	To wash hair	
	To mask body odor	
Clothing	To dye fabric	



# Conclusion

You have now learned what ethnobotany is and identified a variety of plants used for medicinal purposes. Think about all the activities you did and all of the places and plants you visited at the Garden today to answer the following questions:

- What is ethnobotany? Why is it important?
- Was it hard or easy to identify the plants on the *Walking Trail Plant Guide*?
- Can you name three plants you learned about today?
- What are these plants used for?

Thank you for coming to Fairchild Tropical Botanic Garden! We hope that you enjoyed your visit and that you will come back to keep exploring and learning about tropical plants.

Before you leave, please remember to put back all the materials inside the backpack, fill out the survey and return the backpack to the Visitor Center.



**O**ur mission is to save tropical plant diversity by exploring, explaining and conserving the world of tropical plants; fundamental to this task is inspiring a greater knowledge and love for plants and gardening so that all can enjoy the beauty and bounty of the tropical world.



Accredited by the American Association of Museums, Fairchild Tropical Botanic Garden is supported by contributions from members and friends, and in part by the State of Florida, Department of State, Division of Cultural Affairs, the Florida Council on Arts and Culture, the John D. and Catherine T. MacArthur Foundation, the National Endowment for the Arts, the Institute of Museum and Library Services, the Miami-Dade County Tourist Development Council, the Miami-Dade County Department of Cultural Affairs and the Cultural Affairs Council, the Miami-Dade County Mayor and Board of County Commissioners, and with the support of the City of Coral Gables.

**FAIRCHILD TROPICAL BOTANIC GARDEN**  
Exploring, Explaining and Conserving the World of Tropical Plants

10901 Old Cutler Road, Coral Gables, Florida 33156 • 305.667.1651 • [www.fairchildgarden.org](http://www.fairchildgarden.org)