

Ethnobotany for the Holidays

Overview: How do you combine history, social studies, geography, and science, and wrap in a bit of holiday fun? By exploring ethnobotany!

Grade Level/Range: 3rd – 6th grade

Objective: Students share recipes of their favorite holiday foods and research the origins and historical uses of important plant ingredients.

Time: 1-2 hours

Materials:

- recipes from home
- paper and pencil or chalkboard and chalk
- reference books or Internet access



Background Information

Ethnobotany is the scientific study of the relationships that exist between people and plants. Ethnobotany explorations can expose students to cultural diversity issues and ethnic traditions surrounding plants, helping them to appreciate our differences and celebrate our similarities as we observe special occasions.

Plants play a number of roles in our celebrations — they serve as decorations, gifts and most predominantly as FOOD! Most holidays include traditional meals shared by family and friends. Investigating the plant ingredients needed for special dishes is a great way to begin your ethnobotanical journey. To get you started, we've included brief cultural, historical, economic, and botanical synopses of some common plant ingredients.

Ingredient: Table Sugar

Cultures around the world feature sweet treats such as cookies, cakes, breads, and candy in holiday celebrations. Here are some facts about plants that give us sugar:

Sugar cane (*Saccharum officinarum*) is a perennial grass grown in tropical climates. It originated in New Guinea in the South Pacific and was also cultivated in tropical regions of Asia and India. Eager to increase the supply, Europeans colonizing the Americas started sugar plantations and the Caribbean became the world's largest source of sugar. Before discovering how to crystallize sugar, people chewed on the canes to enjoy the flavor. Sugar cane was the first recognized source of sugar. Today two-thirds of the world's sugar comes from sugar cane. It is commercially grown in Asia, South America, Central America, Africa, Australia, the U.S., and Europe. (The history of sugarcane is inextricably linked with slavery in North America. For further exploration, here is a sample lesson plan:

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https://pnwboces.org/ssela/Sample_Lessons/FifthGrade/Grade5/Unit2/Unit2_Lesson4.html
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Native to the Mediterranean coast, **sugar beets** (*Beta vulgaris*) are a biennial root crop grown in temperate regions. In the mid-1700s, a chemist discovered that the sugar crystals found in sugar beets were identical to those found in sugar cane. The sugar beet industry soon blossomed in Europe, encouraged by Napoleon during the British blockade of France. However, even though the crystals were identical in both plants, sugar cane had more of them, making it a more efficient source at the time. Since then, plant breeders have increased the sugar content of beets through selection and today one-third of our sugar comes from sugar beets. The European Union, Russia, and the U.S. are the world's three largest sugar beet producers.

It is estimated that Americans consume about 1.6 ounces of table sugar every day (in addition to table sugar, sugars are also found in fruits, dairy, honey, and maple syrup making our overall sugar consumption much higher). We are most familiar with sugar as a flavoring, but it is also used as a preservative, in pharmaceuticals, to aide fermentation, and even to treat wounds and burns.

Ingredient: Cocoa

Usually combined with sugar and milk to make chocolate, cocoa is another staple in holiday desserts. Here are some cocoa plant facts:

Cacao (*Theobroma cacao*) is a small tree native to South America and grown in tropical regions of North and South America and Africa. Cacao seeds are fermented, roasted, cracked, and then ground to make cocoa. Historically, cocoa had medicinal, ceremonial, and culinary uses. The beans were so prized that Mayans and Aztecs used them as currency, as well as eating them and using them in rituals. Introduced to Europe in the 1500s, cocoa quickly became popular as a treat, especially when combined with sugar. Solid chocolate appeared in the 1800s and is now the most common way we consume cocoa. Cocoa is a 35 billion dollar industry and 70 percent of the world's production is in West Africa. When eaten in moderation, the antioxidant properties of chocolate may lower blood pressure and reduce the risk of heart disease. In addition to cocoa's use as a food, cocoa butter is used in cosmetics and pharmaceuticals.

Ingredient: Pumpkin

Pumpkin pie makes its way onto American tables at several holidays. Here are some pumpkin plant facts:

Pumpkins (*Cucurbita sp.*) are native to North America but are cultivated in many parts of the world. The largest commercial producers are the U.S., Mexico, India, and China. The gourd-like fruits grow on annual vines and range in size from less than a pound to more than 1,000 pounds. Pumpkin flesh, seeds, and flowers are edible. The early colonists made pumpkin "pie" by removing the top of a pumpkin; scooping out the seeds; filling it with milk, spices, and honey; and then baking it in the fire. Pumpkin is a good source of potassium and Vitamin A.

Ingredient: Potato

Potatoes are features of holiday dishes around the globe. Here are some potato facts:

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Potatoes (*Solanum tuberosum*) are annual vines native to Peru. They were first cultivated by the Incas in 200 B.C., and were carried to Europe in the 1500s. They quickly became fundamental to European diets because they were easy to grow, were filling, and nutritious. They were such a staple that when a fungus damaged the potato crop in Ireland, it led to a countrywide famine (Great Famine of 1845-1852). There are many different types, sizes, and colors of potatoes: baking, wax, fingerling; red, yellow, blue, and purple to name a few. An important dietary starch, potatoes also contain 45 percent of the daily Vitamin C requirement. Europe produces the most potatoes, followed by China and India. Not only are potatoes important here on Earth, in 1995 they became the first vegetable grown in space!

Ingredient: Cranberries

One of North America's three commercially grown native fruits (the others are blueberries and concord grapes), cranberries add a unique tart flavor to holiday cuisine. Here are some facts about cranberries:

Cranberries (*Vaccinium macrocarpon*) grow on dwarf shrubs or trailing vines in bogs predominantly in North America, but also in Chile, the Baltic States, and Eastern Europe. Particular about their growing conditions, cranberries require acidic soil, sand, lots of fresh water, a winter chilling period, and a growing season from April to November, limiting their production to select areas. Native Americans used cranberries as a food, to dye fabric, and as a healing agent. Early settlers quickly incorporated cranberries into their diet and, because the fruits are high in Vitamin C, cranberries were stowed on ships and eaten by sailors to prevent scurvy. The name "cranberry" derives from *craneberry*, the name given to the fruit by colonists who thought the flowers resembled the head and bill of a sandhill crane.

As you see, plants provide a wonderful framework for exploring cultures, traditions, and holidays with young gardeners.

Laying the Groundwork

Ask students to bring in a recipe for their favorite holiday dish. As a class, identify and list all the plant ingredients in each recipe. Ask, *Do some recipes share the same key ingredient?*

Exploration

In groups or as a class, have students research the holiday plant ingredients. For each plant, ask:

- *In what part of the world did the plant originate? Does it grow in other places now? If so, how did it travel there? On a map, identify the plant's origin and places where it is found today.*
- *How did people use the plant in the past? How is it used today? How is it used in holiday celebrations?*
- *What growing conditions does this plant need? Could it grow at your school?*
- *What is the nutritional value of the plant? Find recipes that include it.*

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Making Connections

Ask students to interview relatives, neighbors, or friends about their favorite holiday foods and make lists of the plants featured in these recipes. As a class, compare the lists. *What plant-derived ingredients do these dishes share? What ingredients are unique to different cultures?*

Branching Out

Create a Holiday - Plants serve as food ingredients, decorations, and gifts in celebrations around the world. Ask students to list plants they associate with holiday traditions. Ask, *How are the plants used? Why are they important to the holiday? What is your favorite holiday plant?*

Next ask students to invent a new holiday that incorporates a special plant (or plants) as part of the celebration. Depending on their age, children can describe the holiday in writing or in pictures. Ask them to address these aspects of the occasion they invented:

- *In what season will your holiday occur? Why? How long does it last?*
- *What does your holiday celebrate?*
- *What plants are special to your holiday? Why did you choose those particular plants? How do people use them during this holiday? Do they eat them? Are they decorations? Are they gifts?*
- *Describe other special traditions of your new holiday such as foods, presents, songs, games, or family gatherings.*

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