

Herbs

Information compiled by California Foundation for Agriculture in the Classroom

How Produced – Herbs are plants useful for culinary, cosmetic, industrial, medicinal, landscaping, decorative, and fragrance purposes. Both fresh and dried herbs may be used for culinary purposes. Additional purposes for processed herbs include décor, essential oils, teas, dyes, and cosmetics. Herbs are among some of the easiest plants to grow. They require plenty of sunlight and typically grow well in most soils.

Oregano – Oregano has purple flowers and spade-shaped, olive-green leaves. Oregano seeds are planted in greenhouses for 6-8 weeks before being transplanted to the field in spring. A perennial herb, with creeping roots, oregano requires some irrigation, but once established it requires very little water. Well drained soil is ideal, but it does not require especially fertile soil. Oregano is ready for harvest 45 days after planting, before full flower. Oregano is harvested by hand 4-6 times per year. If oregano is harvested early in the morning, the need for cooling is minimized. Oregano intended for the fresh market is kept in cold storage, while oregano intended for the dry market is transported to a dehydrator.

Cilantro – Cilantro leaves are light green, feathery, and flat. While the leaves are used as an herb, the dried seeds, called “coriander,” are used as a spice. Cilantro seed is grown year-round—in the winter in the desert and in the summer along the coast. Extremely hot weather may cause plants to “bolt,” or produce flowers prematurely. Cilantro matures in 40 to 45 days. It is often used as a rotation crop; however, some growers may double-crop each year. Cilantro has a relatively shallow root system and thrives on frequent, short irrigations. It is commonly grown in high-density planting on 80-inch wide beds that are sprinkler irrigated. Cilantro can be harvested by hand and sold in bunches to be used as a fresh herb or mechanically harvested and loosely packed into totes. Once cut, cilantro is immediately cooled and kept in cool storage.

Basil – Basil leaves are glossy and oval-shaped, with smooth or slightly toothed edges. Basil is directly seeded or transplanted to the field in late spring. Most growers use drip irrigation to water basil plants regularly. Basil is a warm season herb, and is harvested from March through mid-November. The timing and method of harvest depends on the use of the herb. For dried basil leaves, the plant is cut just prior to appearance of flowers. To produce essential basil oil, the plant is harvested when the flowers are in full bloom. Fresh

basil is typically harvested several times during the growing season. For the fresh market, leaves are washed and stems are packed in bulk boxes in the field and transferred to cold storage rooms. Once transported to the packinghouse, the herb is hand-sorted into plastic clamshells for retail sales. For the dried herb, low temperature drying of the leaves under forced air is used to retain maximum color.

History – The use of plants as herbs has been important to all cultures since before history was recorded. For thousands of years, tribal cultures have used wild and cultivated herbs for medicinal and food purposes. Historians have found documentation that suggests that hunters and gatherers wrapped meat in the leaves of bushes, accidentally discovering that this process enhanced the taste of meat,

as did certain nuts, seeds, berries, and bark.

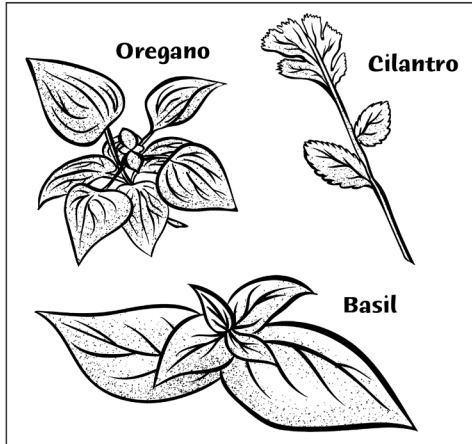
Evidence of early herb gardens dates to Europe in the Middle Ages. Egyptian schools of herbalists have existed since 3000 B.C. Some herbal benefits are symbolic. For example, basil was given to those who needed strength to endure fasting, while rosemary was given to others for remembrance.

Commodity Value – California leads the nation in herb production. In 2016, the value of fresh market organic herbs was approximately \$9.4 million, while the value of organic dry herbs was approximately \$250,000. California is the largest cilantro producing state with annual production exceeding 56 million pounds. The United States produces approximately 200 billion pounds of herbs and spices per year.

Top Producing Counties – Ventura, Imperial, and Monterey counties lead the state in cilantro production. Individual county data is not available for oregano and basil.

Nutritional Value – Most herbs are highly nutritious, but the benefits are not particularly relevant since they are consumed in limited quantities. Oregano, cilantro, and basil are all good sources of dietary fiber, zinc, and calcium. The essential oils produced from these herbs may be applied topically or used aromatically for a variety of medicinal benefits.

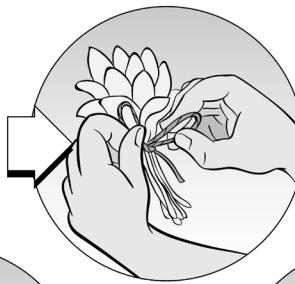
For additional information:
UC Master Gardener Program
Website: mg.ucanr.edu



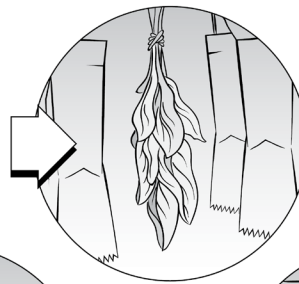
Herbs Activity Sheet



Procure
Cut fresh herbs from your garden or purchase from the grocery store.

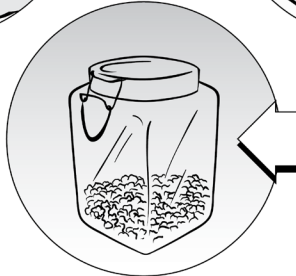


Tie
Bundle small bunches of herbs with string. Large bundles may develop mold.

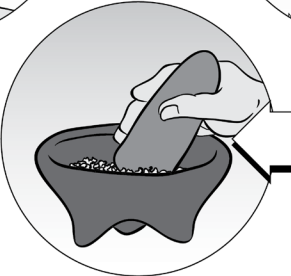


Hang
Hang the bunches up to dry, leaves downward, covered loosely with thin paper bags.

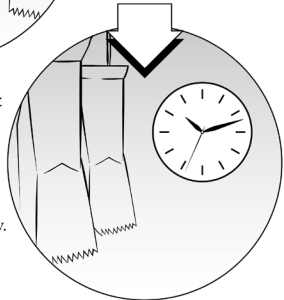
Store
Place in an airtight glass container for up to one year.



Crush
Harvest dry leaves, discarding the stems. Gently break leaves into smaller pieces.



Wait
Allow 7 to 10 days to dry, depending on the size of the bunches and humidity.



Lesson Ideas

- Dry herbs to make a loose-leaf tea.
- Research the medicinal properties of different herbs.
- Create nature prints by using herbs and sun-sensitive fabric or paper.
- Harvest and crush seeds from a cilantro plant to make the spice coriander.
- Make a woven lavender wand.
- Taste and describe different varieties of the same herb.
- Use herbs to make your own potpourri.
- Compare storage methods of fresh herbs.
- Plant your own mini-herb garden in a container.
- Classify herbs by leaf shape, color, and texture.

Fantastic Facts

1. The word oregano comes from the Greek, meaning "joy of the mountain." It was believed Aphrodite, the goddess of love, grew it on Mount Olympus.
2. Cilantro was brought to North America by the English in 1670.
3. Heat diminishes the flavor of fresh herbs, which is why dry herbs are often used in cooking.
4. Oregano was introduced to the United States by soldiers returning from Italy after World War II.
5. Some people may be genetically predisposed to dislike the taste of cilantro.
6. In ancient history, basil was used to embalm mummies.
7. Cilantro seeds are called coriander, which is a spice that has its own unique flavor.

Lesson Plan: Making Herb Butter

Introduction: Butter has long been used as a spread and as a cooking fat. In fact, approximately a third of the world's milk production is devoted to making butter. To make butter, the cream is agitated (stirred up) so that the fat molecules get shaken out of position and clump together. Eventually, after enough agitation, the fat molecules clump so much that butter forms. In this lesson, students will make their own herb butter.

Objective: Students will understand how churning separates the butterfat (the solids) from the buttermilk (the liquid).

California Standards: NGSS: MS-PS1-1, MS-PS1-4; ELA CC: RST.6-8.3

Materials: Heavy whipping cream, finely chopped herbs of your choice, small liquid-tight container with lid, plastic knives, crackers

Procedure:

1. Fill the container halfway with heavy whipping cream and add ¼ teaspoon of herbs.

2. Close the container and begin shaking. The faster you shake it, the faster you make it.
3. As you shake, you will see the cream begin to thicken.
4. Keep vigorously shaking until you see the liquid has separated from the solid.
5. Once you have butter, STOP SHAKING (if you keep shaking the butter will melt). Drain and discard the remaining liquid.
6. Spread butter over crackers and enjoy.
7. While enjoying your butter, discuss how long it took for the butter to form.
 - What variables cause the butter to form more quickly?
 - What is happening at a molecular level?
 - What would be the quickest or most efficient way to turn cream into butter?