

## Commodity Fact Sheet

# Lettuce

Information compiled by California Foundation for Agriculture in the Classroom

**How Produced** – Cool weather is important in lettuce production. Lettuce is a cool-season, annual crop. It grows best in moderate daytime temperatures (73° F) and cool nighttime temperatures (45° F). Lettuce grows well in loose, fertile, sandy-loam soils that are well-supplied with organic matter. Soil should be well-drained and moist, and have a slightly acidic pH of 6.0 to 6.5. Since lettuce seeds are so small, a well-tilled seedbed is essential - large clods will reduce germination. Lettuce is hand-harvested and takes place year-round, from April to October in the Salinas Valley, California and from November to March in Yuma, Arizona. Lettuce is one of the top three vegetables produced in the US, along with tomatoes and potatoes. Iceberg lettuce accounts for about 1/2 of the lettuce produced in the US, with the other 1/2 including romaine, butterhead and leaf lettuces. Growing, harvesting, and marketing of lettuce is mainly from large-scale growers with organic production gaining in popularity. World-wide, the US is the second largest lettuce producer (behind China), with most of the lettuce coming from California and Arizona.



**History** – Lettuce is one of the oldest known vegetables. There are Ancient Egyptian tomb drawings depicting lettuce dating back to about 2500 BC. The Egyptians believed it aided in sleep. Originally used for its seeds to produce oil, it then began to be grown for its leaves. Lettuce spread to the Greeks and Romans who gave it its name lactuca. In Rome, Emperor Caesar Augustus built a statue praising lettuce because he believed eating lettuce had cured him of an illness. It was introduced to North America by Christopher Columbus during his second voyage in 1494. Many varieties developed during the 16th through 18th centuries in Europe. Different forms became popular in different regions. Stem lettuce was most popular in the Mediterranean, Egypt, the Middle East, and China. In Northern Europe, butterhead was most popular. Lettuce varieties have changed over the years. The long, thick-stemmed variety of the past, has evolved into leafier, greener types. In recent times, salad bars have become popular (1970s), and salad mixes of pre-washed and packaged greens have become available (1990s).

**Varieties** – There are several types of lettuce, but the three most common are head, leaf, and romaine. Iceberg lettuce has been the most popular variety, indicated by the largest area harvested, most tonnage produced, and most revenue generated. A shift from iceberg to leaf lettuce being the most popular has occurred in the last ten years. Varieties differ in color, texture, and amount of nutrients.

**Commodity Value** – In 2017, lettuce was number six in California commodity values, generating sales of 2 billion dollars. Lettuce is in the top 20 of California exports, coming in at number 15 with \$315 million in sales. Canada takes in the highest amount of California grown lettuce exports at 89%. Imports of lettuce to California are limited to less than 5%, and come from Mexico and Canada.

**Top Producing Counties** – Monterey County is the top lettuce producing county, producing more than 60% of the crop and generating 1.32 billion dollars. The second highest producing county is Imperial at \$334 million, and third highest is Santa Barbara at \$90 million. Lettuce is easy to grow and yet sensitive to temperature – frost damages it, and heat causes the stem to grow quickly and

the plant to go to seed. Ideal conditions are mild weather, and moist, fertile soil explaining why the coastal counties do well in spring and summer months and Imperial County and Arizona do well in winter months.

**Nutritional Value** – Lettuce is low in calories, fat-free, cholesterol-free, and low in sodium. It has 11 calories per one cup. Lettuce contains dietary fiber along with omega fatty acids that promote good health. Lettuce also provides immune capability with the help of mineral contents like manganese, magnesium, potassium, iron, phosphorus, and calcium. Presence of these mineral compounds decreases harmful free radicals in the body and improves the body's immune system as well as protects from viral infections and related diseases. The iron content in lettuce contributes many beneficial properties for health. Iron is required for the formation of red blood cells and the transportation of oxygen to different parts of the body. These nutritional benefits of lettuce can help prevent anemia and aid in protecting the body from indigestive agents. Lettuce also breaks down heavy protein and carbohydrates helping the stomach function properly. Lettuce contains vitamin A (which helps protect the eye), vitamin C, thiamine and vitamin B6.

### For additional information:

California Leafy Green Products  
(916) 441-1240  
Website: [www.safeleafygreens.org](http://www.safeleafygreens.org)  
YouTube: [youtube.com/user/CALeafyGreens](https://www.youtube.com/user/CALeafyGreens)

Leafy Greens Council  
(716) 517-0248  
Website: [www.leafy-greens.org](http://www.leafy-greens.org)



# Lettuce Activity Sheet

## ANCIENT EGYPT



- Tomb paintings depict lettuce
- Stems used instead of leaves
- Grown for seed and oil

2500 B.C.

## CHINA



- Consumed as a cooked vegetable
- Lettuce traveled to Persia, Greece, Rome
- Stem lettuce variety native to the area

5<sup>TH</sup> CENTURY

## WESTERN EUROPE



- Shorter-stemmed varieties developed
- Christopher Columbus brought lettuce to the New World

15<sup>TH</sup> CENTURY

## AMERICA Modern Varieties Developed



Butterhead



Romaine



Crisphead



Loose Leaf

EARLY 1900s

## WORLD



- Salad bar popularity
- Plant breeding for disease-resistance and more varieties

1970s

## CALIFORNIA

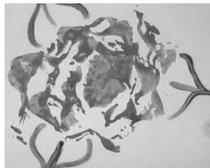


- 1/3 of California-grown lettuce is sold in ready-to-eat packaging
- Contributes 70% of total lettuce exports

TODAY

### Lesson Ideas

- Research Ready-to-Eat bagged lettuce. Include when it started and its success. Compare its popularity to head lettuce.
- Make an artistic salad using leafy greens and other vegetables.
- Identify and illustrate different lettuce varieties.
- Research Lettuce Mosaic Virus and/or the Soil-Dwelling Springtail.
- Create a green smoothie recipe.
- Using the art principle of perspective, research and draw a lettuce or other agricultural field.
- Create artwork using lettuce head stamping (art, see below).



### Fantastic Facts

1. Lettuce is a member of the sunflower family.
2. Over 90% of lettuce sold in the US is grown in California and Arizona.
3. California is the "salad bowl" of America, producing a year-round supply of lettuce, celery, broccoli, and cauliflower.
4. Americans consume 30 pounds of lettuce per person each year.
5. The first modern iceberg variety was created by TW Whitaker of the USDA and was named Great Lakes, although it was developed in California.
6. *Lactuca sativa* is the botanical name for common garden lettuce.
7. Drawings of lettuce are found on ancient Egyptian tombs.
8. Lettuce was recently grown, harvested, and eaten on board the International Space Station.

### Lesson Plan: Growing Lettuce From a Stem

**Introduction:** Lettuce and other leafy greens can be grown from a cutting. Have your students design a science experiment to observe the phenomenon. Research and find out why it works.

**Objective:** Students will investigate what plants needs to grow.

**California Standards:** CC ELA: SL.3-12.4, WHST.6-12.7  
NGSS:4-LS1-1, 5-LS1-1, MS-LS1, HS-LS1

**Materials:** Stems or cuttings from heads of lettuce, bowls, water, observation tools – notebook, pencil, thermometer, ruler.

#### Procedure:

1. Brainstorm what plants need to grow. Ask what would happen if we cut the stem of the lettuce off and put it in water? Have students make predictions. Students will work in groups of 3-4.
2. Bring in heads of lettuce for each group. Cut the stem off about 1 inch from the bottom. Save for the experiment. Use the lettuce for a class salad.

3. Place the cut stem in a bowl of water. Add about ½ to 1 inch of water.
4. Place the bowl in the window or under lights.
5. Draw a picture and record other measurements such as date, time, temp, size, lettuce type, etc.
6. Change the water in the bowl every other day and observe the cutting every day. Watch for new leaves and roots. Make observation notes.
7. After two weeks, you may plant your lettuce in a pot or outside. Continue to make observations.
8. Research why the plants were able to grow after being cut and only with sun and water. Consider other experiments you can conduct to improve lettuce growth.
9. Have groups present their results using evidence, data, and a model to support their findings.