

# Salad Greens

- 1. Why are darker green lettuce leaves more nutritious than lighter green leaves? What is the difference in the nutrient content? How does iceberg lettuce’s nutrient content compare to darker green varieties?**

Primary-level response:

The darker color indicates more nutrients. Darker leaves have more vitamin A, Vitamin C, and fiber. Iceberg lettuce is lower in all nutrients and fiber.

Secondary-level response:

The darker color indicates more nutrients. Darker leaves have more vitamin A, Vitamin C, and fiber. Iceberg lettuce is lower in all nutrients and fiber. Nearly all salad green varieties (like green leaf, red leaf, romaine, butterhead, and iceberg) are an excellent source of vitamin K. Darker lettuce leaves (like green leaf, red leaf, and romaine) are also an excellent source of vitamin A. Romaine and butterhead varieties are a good source of folate, while green leaf lettuce is a good source of vitamin C.

- 2. Describe how vitamin K plays a role in helping blood clot. How much vitamin K should you have in your diet for your age?**

Primary-level response:

Vitamin K helps stop cuts and scrapes from bleeding too much and starts the healing process.

| Age   | Gender         | Amount of Vitamin K |
|-------|----------------|---------------------|
| 4-8   | Girls and Boys | 55 µg               |
| 9-13  | Girls and Boys | 60 µg               |
| 14-18 | Girls and Boys | 75 µg               |

Secondary-level response:

Vitamin K is needed to activate the coagulation cascade, or the events that result in blood clotting to stop the bleeding of cuts and scrapes. Vitamin K allows proteins to bind with calcium to allow for the clotting process. The liver makes the coagulation factors that are dependent on vitamin A. Some people have blood that clots too easy, which can

be life threatening, and they need to take medications that are anticoagulants, that help stop the blood from clotting.

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**3. What are three things that the mineral manganese helps the body to break down?**

Primary-level response:

Manganese is an essential trace nutrient in all forms of life. Many enzymes contain manganese. Some break down amino acids, some break down items to form oxygen, and some break down diphtheria, the toxin that causes illnesses.

Secondary-level response:

Manganese is an essential trace nutrient in all forms of life. Many enzymes contain manganese. Some break down amino acids, some break down items to form oxygen, and some break down diphtheria, the toxin that causes illnesses. Manganese is an essential mineral involved in the formation of bone. It also plays a role in specific reactions related to the metabolism of amino acids, cholesterol, and carbohydrates. It is involved in the syntheses of fatty acids and cholesterol, and the excretion of nitrogen from our bodies.

**4. Name three other vegetables that belong to the family Asteraceae.**

Primary/Secondary-level response:

1. Endive
2. Artichoke
3. Spinach

**5. What are four components of photosynthesis? What is an effect of photosynthesis?**

Primary-level response:

Photosynthesis is the process where plants take light energy (sunshine), carbon dioxide from the air, and water and then make it into carbohydrate or sugar to feed the plant. Photosynthesis takes place in the plant leaves not the stem.

Secondary-level response:

Photosynthesis is the process where plants take light energy (sunshine), carbon dioxide from the air, and water and then make it into carbohydrate or sugar to feed the plant. Photosynthesis takes place in the plant leaves not the stem. The chemical reaction of photosynthesis is:  $6\text{CO}_2 + 6\text{H}_2\text{O} (+ \text{light energy}) + \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ . This is the air we breathe, so deforestation is an environmental concern as it impacts photosynthesis.

**6. Develop a pie graph depicting the percentages of the varieties of lettuce commercially grown in California.**

Primary/Secondary-level response:

The percentages of California grown lettuce varieties\*:

- Romaine: 64%
- Green Leaf: 21%
- Red Leaf: 10%
- Butterhead: 5%

\*Note: Data is from 2006; students may find more current data available when they do their research.

**7. Identify what percentage of all commercially produced salad greens make up the bagged salad sold in the domestic marketplace.**

Primary/Secondary-level response:

The two most common leafy green varieties that make up bagged salad are iceberg and romaine. Approximately 36% of iceberg production and 22% of romaine production goes to processors for bagged salad. Including baby spinach and spring mix, about 30% of leafy greens grown in California are sold as bagged salad.

Sources:

<http://lpi.oregonstate.edu/infocenter/vitamins/vitaminK/>

[www.nal.usda.gov/fnic/foodcomp/search/](http://www.nal.usda.gov/fnic/foodcomp/search/)

[www.leafy-greens.org](http://www.leafy-greens.org)

[www.calgreens.org](http://www.calgreens.org)

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## Student Sleuths – Answer Key



This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from USDA SNAP, known in California as *CalFresh* (formerly Food Stamps). These institutions are equal opportunity providers and employers. *CalFresh* provides assistance to low-income households and can help buy nutritious foods for better health. For *CalFresh* information, call 1-877-847-3663. For important nutrition information, visit [www.cachampionsforchange.net](http://www.cachampionsforchange.net).