

Kiwifruit

1. What is folate and what are the benefits of this B vitamin?

Primary-level response:

Folate belongs to the B vitamin family which generally helps convert food to energy and promotes healthy skin and brain function. More specifically, folate helps protect against birth defects, cancer, and heart disease.

Secondary-level response:

Folate belongs to the B vitamin family which generally helps convert food to energy and promotes healthy skin and brain function. More specifically, folate helps produce and maintain new cells, which is important during times of rapid cell division and growth (e.g. pregnancy). Adequate folate intake helps protect against birth defects such as spina bifida. The terms folate and folic acid are often used interchangeably, however, these two are not one in the same. Folate is found naturally in foods such as fruits and vegetables. Folic acid is a synthetic form of folate used in vitamin supplements and fortified foods.

2. What is the difference between soluble and insoluble fiber? What are the benefits of each?

Primary/Secondary-level response:

Soluble fiber is broken down in the digestive process and is the form of fiber that appears to play a protective role in heart disease and diabetes. The digestive enzymes do not break down insoluble fiber. It helps hold water in the colon, aiding in the prevention of constipation, diverticulosis, hemorrhoids, and some forms of cancer.

3. A study of the 27 most commonly eaten fruits found that the kiwi is the most nutrient-dense fruit. Why? What are the second and third ranked fruits?

Primary-level response:

The kiwifruit is the most nutrient-dense fruit because when compared to equal amounts of other fruits, the kiwifruit contains the highest combined amount of important nutrients, such as vitamin C, that your body needs to protect against disease such as cancer. The second-ranked fruit in the study is the papaya and third-ranked fruit is the cantaloupe.

Secondary-level response:

The kiwifruit is the most nutrient-dense fruit because it contains the highest percent of combined nutrient value per 100 grams. The body needs a variety of nutrients, such as vitamin C, to protect against cancer and heart disease. In addition to this parameter, the kiwifruit has a relatively low calorie per nutrient value (fifth lowest of the 27 fruits in the study) which examines the cost in calories to deliver 1% of the daily value of nutrients. A low calorie per nutrient value is indicative of a nutrient-dense fruit. The second-ranked fruit in the study is papaya and third-ranked fruit is cantaloupe.

4. Which enzyme makes the kiwi a natural meat tenderizer? What does it do?

Primary/Secondary-level response:

Actinidin is the enzyme that breaks down proteins. Kiwis contain actinidin, making them natural meat tenderizers.

5. Identify on a world map the countries where kiwis are grown.

Primary/Secondary-level response:

Chile, New Zealand, Italy, Japan, France, Greece, Spain, and Australia.

6. Kiwis are available year-round in the United States. How does the growing and harvesting time compare to other kiwi-producing countries, like Chile and New Zealand? Is it different? Why or why not?

Primary/Secondary-level response:

The U.S. grows and harvests fruit in the late fall, October through November. Availability can occur from October through May with proper storage and handling. The New Zealand and Chile season is exactly the opposite. In these countries, kiwis are harvested in April and May. Yes, it is different due to the difference in seasons between the hemispheres where the countries are located. Kiwi plants prefer to hibernate in the winter months and bud in spring with growth of the berry occurring through the summer months.

7. Research how the care of the kiwi vine and the importance of pruning are similar and different to that of other vine and tree fruits.

Primary/Secondary-level response:

Unlike many shrubs and trees that do well without ever being thinned or cut back, even vines grown in sizable settings may require regular pruning to keep them healthy,

productive, attractive, and under control. Many vines just don't know when to quit—or in which direction to grow. They must be taken in hand early on or they will be collapsing trellises, pulling down fences, and obscuring windows and doors. Once vines have developed adequate roots, most just keep on growing above ground. To keep a vigorous climber healthy, you must do the following:

- Remove any dead, damaged, diseased, or unproductive stems.
- Remove overly tangled stems.
- Remove errant stems, especially those growing away from the support.
- Direct its growth.
- Limit its growth.

Sources:

www.kiwifruit.org

www.dole5aday.com/referencecenter/encyclopedia.kiwifruits/kiwi_5aday3.jsp

<http://ods.od.nih.gov/factsheets/folate.asp>

www.crfg.org/ (search kiwifruit)

<http://aggie-horticulture.tamu.edu/> (then search for pruning and planting)

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