

Green Beans

1. Why is nitrogen important for plant growth?

Fertilizers are compounds given to plants with the intention of promoting growth; they are usually applied either via the soil, for uptake by plant roots or by foliar spraying for uptake through leaves. Fertilizers can be organic or inorganic. They can be naturally-occurring compounds, or manufactured through natural processes or chemical processes. Fertilizers typically provide the three major plant nutrients: nitrogen, phosphorus, and potassium.

2. What is riboflavin? Name three things it does for our bodies.

Riboflavin, or vitamin B2, is a water-soluble vitamin in the B-complex group. It is important for:

- 1) body growth,
- 2) red blood cell production, and
- 3) helping to release energy from carbohydrates.

3. Illustrate the two cotyledons, hypocotyls, epicotyl, and plumule that form during green bean growth.

The illustration on page 2 of the educator newsletter can be used for guidance.

4. What is a dicot?

A flowering plant with two embryonic seed leaves or cotyledons that appear when the seed germinates.

5. What were some of the harvesting techniques for green beans practiced by Native Americans as observed by early explorers?

The beans were domesticated from wild plants. These domesticated beans were light in color and had small seeds. They domesticated beans and planted them in companion gardens. Some Native American communities grew “companion gardens” of green

beans, squash, and corn. The corn supported the growing green bean vines; the green beans provided usable nitrogen for the other plants; and the squash plants covered the soil, keeping it moist and preventing small animals from damaging them. These were essential or staple crops for the families.

6. What does the “three sisters of life” refer to in green bean history?

Much of Native American agriculture and cuisine was based on corn, beans, and squash, which the Indians called "three sisters of life." Native Americans planted seeds for these three vegetables all together in a "hill" rather than in a row.

7. Map the California counties where green beans are grown for commercial production.

Tulare, Orange, San Luis Obispo, Riverside, Santa Clara, Contra Costa, Stanislaus, San Diego, San Mateo, and San Bernardino.

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