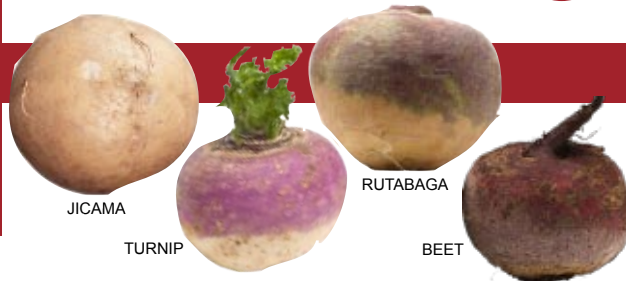


FRESH from the FARM

The Fresh from the Farm featured vegetable is **Root Vegetables**

for educators



Healthy Kids Do Better in School

Taste tests are a great strategy to encourage students to try new foods. Create a safe environment for students to taste new fruits and vegetables. A low-pressure approach to taste testing can help students develop a sense of what they like. Incorporate **Fresh from the Farm** month fruits and vegetables into lesson plans and help students expand their eating horizons.

Exploring Root Vegetables: Taste Testing

Getting Started:

Partner with your school nutrition staff, local farmers' market, or grocery store to obtain produce for taste tests.

What You Will Need (per group):

- ½ cup each of raw, peeled, and sliced jicama and turnips
- ½ cup each of cooked* and sliced beets, turnips, and rutabagas
- Printed Nutrition Facts labels for jicama, turnips, beets, and rutabagas**

Activity:

- Record sensory impressions by creating a Venn diagram on the board.
- Taste vegetables and note the look, texture, smell, color, and taste.
- Ask students to write a reflection or thank you letter to the farmer or school nutrition staff. Include sensory descriptions or reasons why they liked or disliked certain items.
- Examine Nutrition Facts labels for all items. Discuss how they differ nutritionally.
- Refer to Botanical Facts (page 2) and explain how tubers differ from roots.

*Make arrangements to cook (steam) beets and rutabagas in advance.

**Download from the Educators' Corner of www.harvestofthemonth.com.

For more ideas, reference: *Kids Cook Farm-Fresh Food*, California Department of Education, 2002.

Cooking in Class: **Jicama Cucumber Salad**

Ingredients: 24 tastes - ¼ cup each

- 1 pound jicama, peeled & cut into ½-inch cubes
- 2 medium cucumbers, quartered & sliced ¼-inch thick
- 1 fresh lime
- 3 teaspoons chili powder
- Small plates and forks

1. Combine jicama and cucumbers in a large bowl.
 2. Squeeze lime juice over salad and mix well.
 3. Sprinkle seasoning over salad and mix well.
- Serve immediately.

Source: Hawthorne School District, 2009.

For nutrition information, visit:
www.harvestofthemonth.com.



How Much Do I Need?

A ½ cup of sliced root vegetables is about one cupped handful. Root vegetables come in a variety of colors and most can be eaten raw or cooked. The amount of fruits and vegetables you need depends on your age, gender, and physical activity level. Remind students to eat a variety of colorful fruits and vegetables throughout the day.

Recommended Daily Amounts of Fruits and Vegetables*

Ages 5 - 12	Ages 13 & older
2 ½ - 5 cups per day	3 ½ - 6 ½ cups per day

*Active people should eat the higher number of cups per day.

Visit www.mypyramid.gov to learn more.

Nutrition Facts	
Serving size	½ cup raw sliced jicama (60g)
Amount per serving	
Calories 23	Calories from Fat 0g
% Daily Value	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 5g	2%
Dietary Fiber 3g	12%
Sugars 1g	
Protein 0g	
Vitamin A 0%	Calcium 1%
Vitamin C 20%	Iron 2%
Source: www.nutritiondata.com	

Dakota
COUNTY



Botanical Facts

Root vegetables are the roots of plants that are eaten as vegetables. These roots grow into the ground from the base of the plant stem. They anchor the plant, absorb water and nutrients, and store energy. Root vegetables are divided into six subgroups: Tubers, Tap Roots, Tuberous Roots, Corms, Rhizomes, and Bulbs.

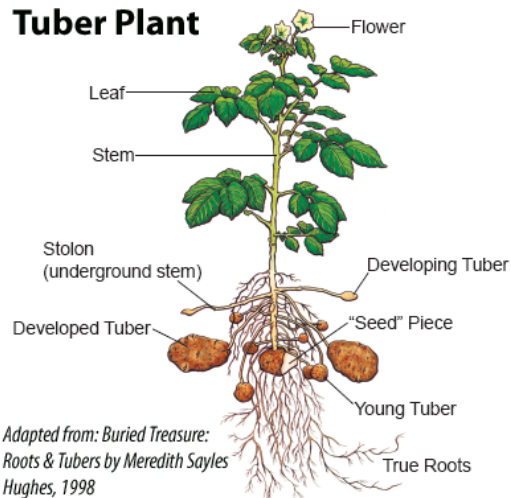
Tubers differ from other roots in that they are swollen underground stems, capable of producing new plants and storing energy for the parent plant. If the parent plant dies, the underground tubers can create new plants. Other roots can take nutrients from the ground, but cannot store energy or use it for reproduction. So while every tuber is a root vegetable, not all roots are tubers.*

Subgroup	Varieties
Tubers	Potato, sunchoke, yam
Tap Roots	Beet, carrot, cassava, jicama, parsnip, radish, rutabaga, turnip
Tuberous Roots	Sweet potato, yucca
Corms	Celeriac, eddo, taro, water chestnut
Rhizomes	Arrowroot, galangal, ginger, ginseng, lotus root, turmeric
Bulbs	Garlic, onion, shallot

*Refer to Carrots, Potatoes, and Sweet Potatoes newsletters for more information about root vegetable varieties.

For more information, visit: <http://aggie-horticulture.tamu.edu/extension/specialty>

Tuber Plant



Adapted from: *Buried Treasure: Roots & Tubers* by Meredith Sayles Hughes, 1998

Reasons to Eat Root Vegetables

- A ½ cup of most root vegetables is an excellent source of vitamin C.
- A ½ cup of sliced jicama is a good source of fiber.
- Complex carbohydrates* (commonly referred to as “starches”) are a key nutrient in root vegetables.

Champion Sources of Complex Carbohydrates*

- Corn
- Peas
- Dry beans
- Sweet potatoes

* “Champion foods” include those in which most of their calories come from complex carbohydrates.

Source: *USDA Nutrient Database*

For more information, reference: *Wellness Foods A to Z* by Sheldon Margen, Rebus, 2002.



Home Grown Facts

- Parsnips, potatoes, and turnips grown in Minnesota are in season in September and October.
- Minnesota produces more sugar beets than any other state in the country.
- Askov, Minnesota, hosts an annual Rutabaga Festival.

Source: <http://www.minnesotagrown.org>

Student Activity:

- Minnesota imports some produce from other states or countries. Locally grown foods, especially fruits and vegetables, are likely to be fresher and taste better than foods shipped from out-of-state.
- Ask the produce manager at your local market where the store buys its produce.
- Find more information about Minnesota Grown produce and which of your local markets carry local produce by ordering a Minnesota Grown Directory.

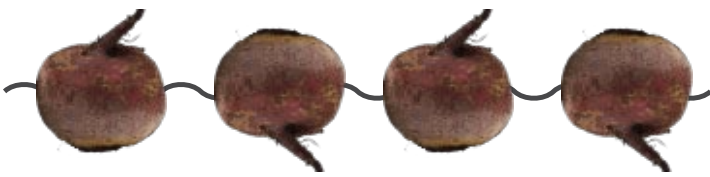
For more information, visit: www.minnesotagrown.org

What Are Complex Carbohydrates?

- “Starchy vegetables” provide calories in the form of complex carbohydrates. They also provide vitamins, minerals, and fiber.
- The primary function of carbohydrates is to provide energy for the body, especially the brain and nervous system.
- Most people should get 55-60%, or over half, of their total calories from carbohydrates, preferably starches and naturally occurring sugars.
- Complex carbohydrates are made of polysaccharides (long chains of sugar units) that come from plant-based foods. The body uses enzymes to break down complex carbohydrates like starch into glucose, which the body then uses for energy. In plants, starch is produced by photosynthesis. Tubers store the highest quantities of starch of all vegetables.

Source: *Understanding Normal and Clinical Nutrition by Catalog, Whitney, and Rolfes, Sixth Edition, 2002, pp. 97, 114-117.*

For more information, visit: www.fruitsandveggiesmatter.gov



Adventurous Activities

Math Analysis

Compare and contrast the content of predominant nutrients – including vitamins and minerals – in different root vegetable varieties (e.g., jicama, parsnips, rutabagas, turnips, beets).

Helpful Hint: Complete in conjunction with Taste Testing activity on page 1.

For information, visit: www.nal.usda.gov/fnic/foodcomp/search

Student Advocates

- Form a Nutrition Advisory Council to promote nutrition and school meals to student peers.
- Collaborate with school nutrition staff to create a taste testing event, make seasonal produce suggestions, or develop a standardized menu that complies with USDA school meal nutrition guidelines.

For more information, visit: www.letsmove.gov/school-step-1.php
www.empowerME2b.org - Download the *empowerME@school toolkit*

A Slice of Root Vegetable History

- Root vegetables were an essential part of the diet during the early evolution of humankind (about five million years ago).
- Turnip fossils found in caves in China date back thousands of years.
- Jicama was brought to the Philippines and Malaysia by the Spanish in the 1600s.
- Rutabagas are believed to have originated in Bohemia in the 1700s as a cross between the turnip and wild cabbage.
- American colonists relied heavily on root vegetables because they could be stored for months in the harsh New England winters.



For more information, visit:
www.ba.ars.usda.gov/hb66/078jicama.pdf

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Cafeteria Connections

- Examine the school lunch menu. List the different choices of root vegetables.
- Have students design posters promoting the nutritional significance of a root vegetable of their choice. Display posters in cafeteria.
- Ask students to select which root vegetables they will try. Record feedback and submit summary to the school nutrition staff with recommendations.
- Promote lunch time as a way for students to obtain maximum nutrition and help meet their daily fruit and vegetable needs. Design promotional messages around fruits and vegetables served that week.

For more ideas, visit: www.schoolnutrition.org

Physical Activity Corner

International Walk and Bike to School Day is celebrated every year in early October. In 2010, 11 Dakota County schools participated, with over 3,000 students taking part in a variety of activities, including remote drop sites for busses and police-assisted crossing on busy streets. Some schools in Dakota County have organized “walking school buses” to provide opportunities for students to take safe routes to school throughout the year.

For more information, visit www.walkingschoolbus.org



Walk to School Day at Echo Park Elementary School in Burnsville

A healthy lifestyle consists not only of a healthy overall diet, but also plenty of physical activity. The recommended amount of physical activity for children is 60 minutes on most days and 30 minutes for adults.

For more information, visit:
www.walktoschool.com

