

Fruits and Vegetables

Many types of fruits and vegetables can be grown in North Dakota. Some are grown in backyard gardens or community gardens for use by families. Some vegetables, such as potatoes, are grown in large fields and sold throughout the U.S. Look for apples, squash, potatoes, corn on the cob and many other foods grown in North Dakota in grocery stores, roadside stands or farmers markets during the summer and fall.



Planting Seeds

Picking Apples



Farmers Market



Production

Think Like a Plant Scientist

Potatoes!

Circle the correct word to accurately complete each sentence.

- Potatoes are a big industry in North Dakota. In 2021, 76,000 (**akers** or **acres**) were planted to potatoes.
- This is about the size of 57,500 football (**fields** or **feilds**).
- All these acres produced about 2.4 (**billyon** or **billion**) pounds of potatoes.
- That would be the (**wait** or **weight**) of 7.6 million 315-pound football linemen.
- The (**farmer's** or **farmers'**) value of the potato crop was \$248,000,000.
- Each potato has a different (**purpose** or **purpuse**). White potatoes are made into potato chips. Red and yellow potatoes are washed, bagged and sent to the store to be purchased. Russet potatoes are made into french fries.
- On (**avrage** or **average**), each person in the U.S. eats 111 pounds of potatoes each year. That's about 1/3 pound of potatoes each day, or eating one medium-sized potato. That makes potatoes America's favorite vegetable.



Plant foods are classified into six groups:

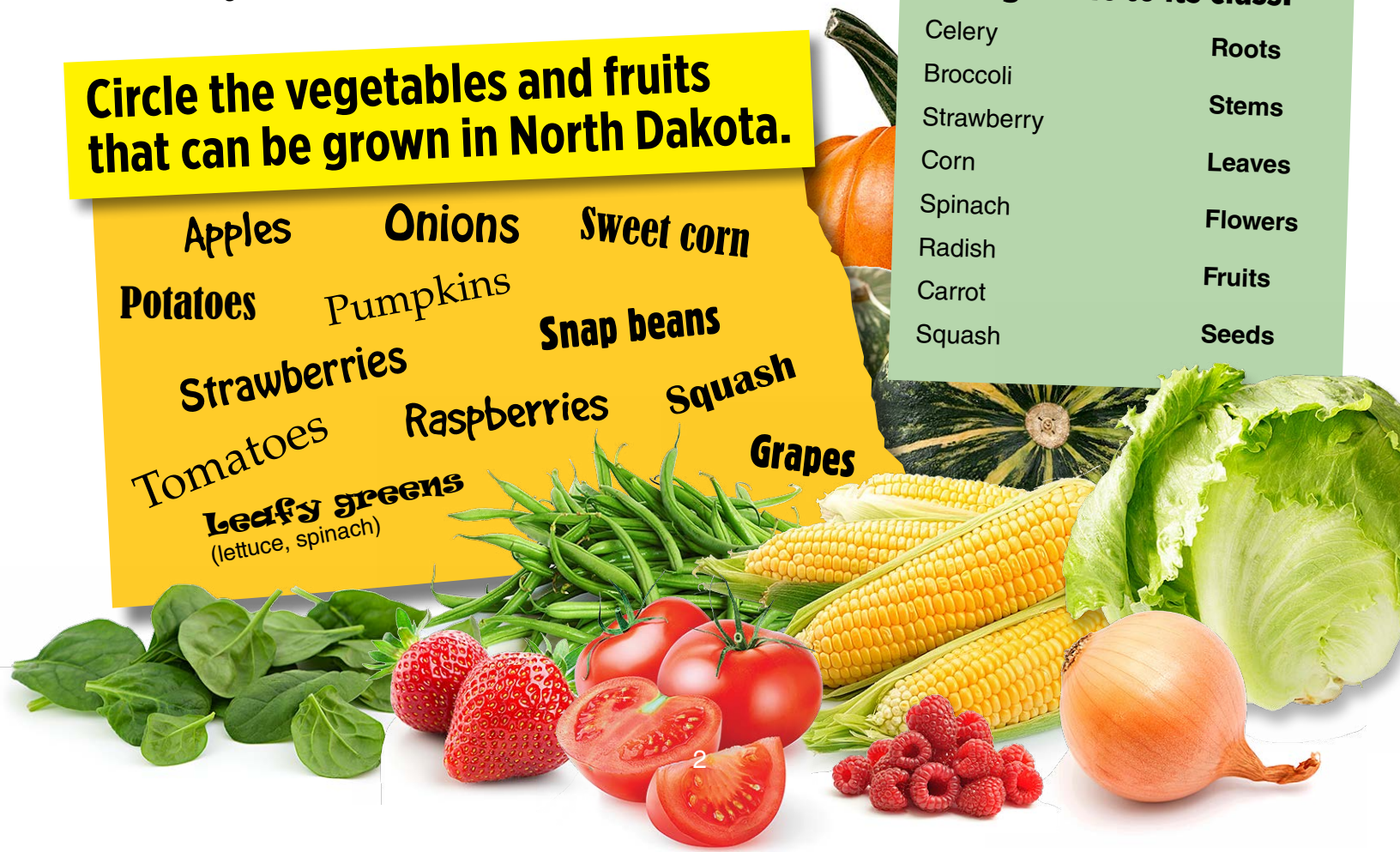
- Roots** grow underground, absorb water and soil nutrients, and hold the plant in the ground.
- Stems** provide the plant with physical support above the ground. Stems also have inner parts that move nutrition in the plant.
- Leaves** help make food for the plant.
- Flowers** attract bees to the plant so the buds can grow into fruits.
- Fruits** grow from the flowers on plants and contain seeds.
- Seeds** grow into new plants when the conditions are right.

Circle the vegetables and fruits that can be grown in North Dakota.

Apples Onions Sweet corn
 Potatoes Pumpkins
 Strawberries Snap beans
 Tomatoes Raspberries Squash
 Leafy greens
 (lettuce, spinach) Grapes

Draw a line from the fruit or vegetable to its class.

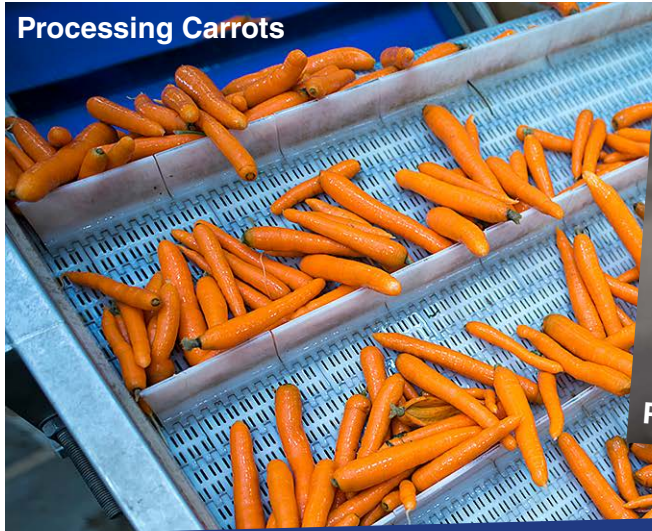
Celery	Roots
Broccoli	Stems
Strawberry	Leaves
Corn	Flowers
Spinach	Fruits
Radish	Seeds
Carrot	
Squash	



Processing

Follow the Food System to a Place Near You

In our food system, foods are grown, harvested, packaged and transported from the place they are grown to a grocery store, school or restaurant.



Processing Carrots



Processing Asparagus

Match Them Up

— Write the letter of the definition on the line by the term.

Production _____

Processing _____

Distribution _____

Consumption _____

Composting/recycling _____

A. Preparing and eating fruits and vegetables

B. Washing, cutting, mixing and packaging fruits and vegetables

C. Allowing the fruits and vegetables to break down to be returned to the soil

D. Growing and harvesting fruits and vegetables

E. Transporting, storing, advertising and selling fruits and vegetables

Just Preserve It

Fruits and vegetables can be preserved (or processed) in different ways to keep them safe and tasty to eat. They can be canned, frozen, dried, made into jams and jellies, or even fermented (sauerkraut, for example).

List two fruits and two vegetables in each category.

	Fruit	Vegetable
Dried	_____	_____
	_____	_____
Canned	_____	_____
	_____	_____
Frozen	_____	_____
	_____	_____



Distribution

Take Your Taste Buds on a Trip Around the World

Can we grow bananas, oranges or lemons in North Dakota? We wish! We need to import (or bring in) some fruits and vegetables from other states or countries because our growing conditions are not right for them.

Color the North American and South American countries on the map as noted. Also, mark an X on the line by the fruits and vegetables you have tasted.

Leading Suppliers of U.S. Imports

- Tomatoes (Mexico) — yellow
- Potatoes (Canada) — orange
- Grapes (Chile) — green
- Pineapples (Costa Rica) — purple
- Bananas (Guatemala) — red
- Asparagus (Peru) — yellow
- Peas (Ecuador) — orange
- Strawberries (Argentina) — purple
- Oranges and orange juice (Brazil) — red
- Bananas (Honduras) — green
- Lemons (Colombia) — blue
- Avocados (Mexico) — yellow



Train with Containers



Ocean-going Ship



Iceberg Lettuce on Semi-truck

Career Corner

Larry Schumacker

Larry's Hydro Lettuce
Fullerton, North Dakota

Even during the cold North Dakota winter, Larry Schumacker enjoys growing lettuce. He developed and is the sole employee of Larry's Hydro Lettuce at Fullerton, ND. His website proudly declares, "Utilizing modern technology, it is our mission to provide safe, top-quality and long-lasting lettuce."

"I've been a lifelong gardener. In the winter months, I needed something to do, so I thought, 'Why can't we raise produce year-round in North Dakota?' It's being done in other cold-weather states," Larry said.

In 2010, he started visiting with North Dakota State University staff who helped him develop a plan and build his greenhouse. In 2016, he raised his first crop of hydroponic lettuce.

"Hydroponic is a growing process that doesn't use soil and is water efficient," Larry said. "I have little cubes that I put the seeds in, and they germinate for 10 days to 2 weeks. Then I transplant them – put them in my grow channels that are 8 feet long and hold 12 individual plants. Then it's 35 days to harvest."

The plants get light from LED bulbs and nutrients from the water. The water can be heated or cooled so even if the room temperature changes, the roots are in the controlled water temperature so the lettuce grows well.

"I mostly grow romaine and butterhead lettuce varieties, but also red oak leaf, green oak leaf, green leaf and summer crisp, plus kale and bok choy — not your typical iceberg," Larry said. He can have 4,200 plants in his two growing rooms.

Every Monday Larry delivers lettuce to the LaMoure school and BisMan Co-op in Bismarck, plus he sells to area restaurants.

"The school cooks say the kids are eating more lettuce, so I assume that's thanks to the flavor and variety," Larry said. "It's a good feeling to hear that kids go back for seconds (of my lettuce)."

Larry plans to market his lettuce to more schools, restaurants and markets. He enjoys seeing the expressions on people's faces when they see his beautiful North Dakota-grown lettuce.



Hydroponic Growing Tray



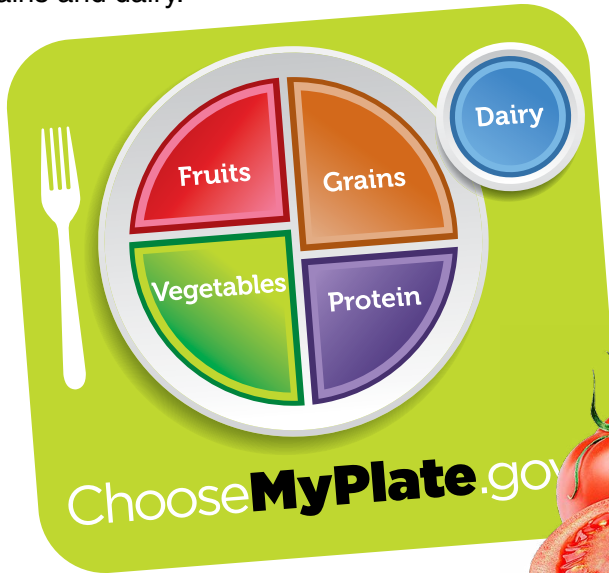
Larry Schumacker with 3-week-old Romaine

Bok Choy at 3 Weeks



Consumption

MyPlate says you should fill half of your plate with fruits and vegetables, but you need foods from all the food groups to stay healthy. Besides fruits and vegetables, you need protein, grains and dairy.



Fruit or Vegetable?

A botanist is a scientist who studies plants. A dietitian/nutritionist is a scientist who helps people make helpful food choices. These two people view fruits and vegetables differently.

A botanist calls a plant food with seeds a fruit. Tomatoes and zucchini are fruits of the plant. A dietitian/nutritionist looks at how the food is used on your menu. Tomatoes and zucchini are considered vegetables on MyPlate because you use them as vegetables.

Botanist with Tomatoes



List the foods you ate from the fruit and vegetable groups yesterday.

Try This at Home

Do you like salsa? Have you tried making it with a little help from an adult? Here's an easy recipe with many ingredients that are grown in North Dakota.

Black Bean Salsa

- 1 (15-ounce) can black beans, drained and rinsed
- 1 medium tomato, diced
- 1/2 medium onion, finely chopped
- 1/2 green bell pepper, chopped
- 1 jalapeno pepper, minced (or to taste)
- 1/2 cup fresh cilantro, chopped
- 2 Tbsp. lime juice or lemon juice

Safety first:

Wash your hands with soap and water for at least 20 seconds before you prepare food.

Have an adult help you when cutting vegetables.

Be careful when you handle hot peppers such as jalapeno peppers. Wear plastic gloves and do not rub your eyes, even if they itch.

Add all ingredients to a bowl and mix together. Serve with baked tortilla chips.



Nutrition Facts

8 servings per container

Serving size 1/8 recipe (91g)

Amount per serving

Calories **80**

Total Fat 0g % Daily Value*

Saturated Fat 0g 0%

Trans Fat 0g 0%

Cholesterol 0mg 0%

Sodium 10mg 0%

Total Carbohydrate 15g 5%

Dietary Fiber 5g 19%

Total Sugars 2g

Includes 0g Added Sugars 0%

Protein 5g

Vitamin D 0mcg 0%

Calcium 20mg 0%

Iron 1mg 6%

Potassium 270mg 6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: Black Beans, Tomato, Green Pepper, Onion, Lemon Juice, Cilantro, Jalapeno Pepper.

Math Challenge

1. If you doubled this recipe (multiplied the ingredients by 2), how much green pepper would you need?
_____ green pepper
2. If you made this recipe four times, how many ounces of canned black beans would you need? _____ ounces
3. If you wanted to make half of the recipe, how much cilantro would you need?
_____ cup cilantro
4. According to this Nutrition Facts label, if you ate three servings of the salsa, how many calories would you consume?
_____ calories
5. If you had one-half of a serving, what percent of your daily fiber would you consume?
_____ %
6. How much saturated fat would five servings have? _____ grams (g)



Compost

Compost is decayed organic material used to improve soil health.

Compostables are divided into three main categories: greens, browns and water.

Greens include food scraps such as apple cores, leafy greens, onion skins, corn cobs and husks, egg shells, pumpkins, coffee grounds and any other refuse from fruits and vegetables.

Browns include branchy plants, leaves, shredded paper, newspaper, sawdust, nut shells, coffee filters, straw, small sticks and twigs, wood chips and empty cardboard tubes.

Water provides moisture to help break down the organic matter.

Put a **C** in front of the organic materials that can be composted.

- | | | |
|--------------------|--------------------|-----------------------|
| _____ banana peels | _____ lettuce | _____ fried chicken |
| _____ meat bones | _____ bacon grease | _____ potatoes |
| _____ yogurt | _____ carrot tops | _____ grass clippings |



Compost Bin

Take this Ag Mag home to share what you've learned about fruits and vegetables.

Thank you for providing information for this Ag Mag:

Larry's Hydro Lettuce

National Center for Home Food Preservation

North Dakota State University Extension

USDA Food and Nutrition Service

USDA MyPlate

USDA National Agricultural Statistics Service



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