Data Sheet: Wheat (Dinner Roll)

While there are many different ingredients used to make dinner rolls, the main ingredient is flour. Two cups of flour can make 12 dinner rolls. Flour is a powdery substance that comes from wheat that has been mashed and ground up. Wheat is a major component in many foods such as bread, crackers, biscuits, pancakes, pasta, noodles, pies, pizza, cakes, cookies, muffins, rolls, doughnuts, gravy, beer, and breakfast cereals. The gluten contained in wheat is a key component in many of these products.

Wheat is grown on more land area than any other food crop, using around 220.4 million hectares of arable land in 2014. Wheat is a type of grass that is farmed for its seeds.

Why is wheat on the food tray?

French Bread Roll

Nutrition Facts	
Serving size	**1 roll (71g)**
Calories	**180**
	% Daily Value*
Total Fat 1.5g	**2%**
Saturated Fat 0g	
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 360mg	**16%**
Total Carbohydrates 34g	**12%**
Dietary Fiber 1g	**4%**
Total Sugars 1g	
Protein 6g	**12%**
Vitamin D 0mg	0%
Calcium 66mg	6%
Iron 2mg	10%
Potassium 57mg	2%

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

Many cultures use wheat as a major component of their diets because of wheat's ability to adapt and grow in many regions, from areas close to the arctic to land near the equator. In addition, wheat can be stored for a long time and can be used to make a wide variety of interesting and satisfying foods.

Wheat is an important source of carbohydrates, and it is the leading source of plant protein in human food, with protein content at about 13%. This is relatively high compared to other major cereals such as rice or corn. While the amount of protein in wheat is high, it does not provide as many essential amino acids as other cereals. When wheat is eaten as a whole grain it is a source of multiple nutrients and dietary fiber.

Understanding and caring for wheat plants

Farmers need to understand how wheat grows and what it needs to thrive to be successful in producing the greatest amount of wheat each year. Proper soil preparation can lead to a farmer harvesting about 44 bushels of wheat per acre. Seed placement and spring fertilizers help provide wheat plants a strong start. When wheat first sprouts from a seed, leaves emerge from the shoot in a telescoping fashion until flowering. The last leaf produced by a wheat plant is known as the flag leaf. This leaf is essential in helping the plants transfer energy from the sun to supply carbohydrates to the rest of the plant including the part we consume. Wheat roots are among the deepest of crops, extending as far as 2 meters deep. These roots allow the plant to get the essential water it needs especially during times of drought. Wheat normally needs between 110 and 130 days between planting and harvest, depending upon climate, seed type, and soil conditions.

Data Sheet: Corn Plant (Corn)

Corn, also known as maize, was originally cultivated from grass by the Indigenous peoples in southern Mexico about 10,000 years ago. The leafy stalk of the plant produced flower structures, called ears, that produced kernels, or seeds.

Today corn is a staple food in many parts of the world. While it is the largest produced crop in the world, very little of the corn grown is used for direct human consumption. Some of the corn produced is used to make biofuels, animal feed, and other consumer products. Corn is one of the crops the federal government encourages farms to grow because it has so many uses and helps protect us from food shortages.

There are six major types of corn: dent corn, flint corn, pod corn, popcorn, flour corn, and sweet corn. When we think about corn as a vegetable on a lunch tray, we are eating sweet corn, while many farm animals are fed dent corn.

One corn stalk produces one ear of corn a year. Some of the corn produced is used for food for humans, but corn is also used for a wide variety of industrialized food products including cooking oil, corn starch, corn syrup, and grain alcohol.

Why is corn on the lunch tray?

Corn

Nutrition Facts

Serving size	**½ Cup (123g)**
Calories	**60**
	% Daily Value*
Total Fat 0.5g	**1%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 260mg	**11%**
Total Carbohydrates 11g	**4%**
Dietary Fiber 2g	**7%**
Total Sugars 5g	
Protein 2g	**4%**
Vitamin D	0%
Calcium 4mg	0%
Iron	0%
Potassium 160mg	4%

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

Corn is one of the most grown crops in the United States as well as the world. While most of the variety that is produced is used to feed animals, a small percentage of it is used to produce sweet corn used for human consumption. Raw yellow sweet corn kernels are composed of 76% water, 19% carbohydrates, 3% protein, and 1% fat. While corn does not have a lot of micronutritional value, it is widely available, and therefore, it shows up in many school lunch programs.

Understanding and caring for corn plants

It is important for farmers to understand the different stages of development of corn stalk and what it needs to thrive if they want to be successful in producing the greatest amount of corn during the harvest. Corn plants need to be planted in soil by other corn plants because corn is pollinated with the help of wind. One acre of land can be planted with 30,000 corn plants. Corn plants have a shallow root system; corn must be planted in spring in temperate climates because it is cold-intolerant. When corn sprouts, leaves emerge from the shoot in a telescoping fashion until flowering. The leaves are essential in helping the plants transfer energy from the sun to supply carbohydrates to the rest of the plant including the kernels of corn we consume. Corn is very water-sensitive. It is important that the soil doesn't lose its moisture. Corn needs around 10 gallons of water weekly. Many modern farming techniques have been developed to prevent water loss from the soil. Farmers typically harvest corn during late summer to mid-autumn.

Data Sheet: Chicken (Chicken Nugget)

Nuggets are a chicken product made from chicken meat that is battered and breaded, deep-fried or baked.

Invented in the 1950s, chicken nuggets have become a popular item in fast food restaurants as well as a frozen product sold for home use.

Chicken nuggets are produced by deboning chickens and cutting the meat to the correct size. The pieces and other ingredients are forced through mesh, creating a meat paste that is formed into the desired shape. It is then battered and breaded and fried in oil. Finally, the nuggets are packaged, frozen, and stored for shipping.

There are different types of chicken used in the food industry. The type of chicken used for eating is called a broiler chicken. These chickens usually live up to 8 weeks. Chickens can be prepared in a vast range of ways including baking, grilling, barbecuing, frying, and boiling. A single broiler chicken produces about 130 chicken nuggets. Another type of chicken are layer hens. They are used to produce eggs. Some breeds of layer hens can lay up to 300 eggs per year.

Why is chicken on the food tray?

Chicken Nuggets

Nutrition Facts	
Serving size	**5 pieces (90g)**
Calories	**270**
	% Daily Value*
Total Fat 17g	**22%**
Saturated Fat 4g	**20%**
Trans Fat 0g	
Cholesterol 40mg	**13%**
Sodium 470mg	**20%**
Total Carbohydrates 15g	**5%**
Dietary Fiber 0g	**0%**
Total Sugars 0g	**0%**
Protein 14g	**28%**
Vitamin D 0g	0%
Calcium 0g	0%
Iron 0g	0%
Potassium 135mg	2%

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

Consumption of chicken is surpassing that of beef in industrialized countries. In 2011, 9 billion broiler chickens were produced in the United States. Mass production of chicken meat is a global industry, with three breeding companies supplying 90% of the world's broilers.

Prepared chicken has become a staple fast food. Chicken is sometimes cited as being more healthy than red meat, with lower concentration of cholesterol and saturated fat. Chicken nuggets are extremely high in saturated fat.

Understanding and caring for broiler chickens

It is important for a farmer to know the needs of chickens in order to successfully keep chickens healthy, strong, and producing the greatest amount of meat. Chickens need about 3 square feet of land area per chicken in a large enclosure. Chickens are omnivores and enjoy eating a variety of fruits and vegetables like corn but also will eat table scraps and insects as well. Typically broiler chickens are fed a high protein diet in order to help them get to a desirable size. Additionally broiler chickens drink about 1 quart of water a day.

Data Sheet: Apple Tree (Apple)

Apples are sweet, edible fruits produced from apple trees. They are an important food in many cultures. Apple trees originated in central Asia, where you can still find its wild ancestor. They have been cultivated for thousands of years in Asia and Europe, and were introduced to North America by early European colonists.

Today, there are more than 7,500 known varieties of apple trees. They vary in the type of fruit they produce, the size of the tree, and even the type of climate in which the tree can grow.

One apple tree can produce 10 bushels per year. There are about 125 apples in a bushel. Different varieties of apples are bred for different tastes and uses. The main uses for apples include eating them raw, cooking, and for cider production. Apples mature in the late summer and autumn months. While different varieties grow to be different sizes, commercial farmers aim to grow apples that are 2¾–3¼ inches in diameter because that is what consumers prefer.

Why is an apple on the lunch tray?

Apple

Nutrition Facts	
Serving size	1 medium apple (154g)
Calories	**80**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat	
Trans Fat	
Cholesterol 0g	**0%**
Sodium 0g	**0%**
Total Carbohydrates 22g	**7%**
Dietary Fiber 5g	**20%**
Total Sugars 16g	
Protein 0g	**0%**
Vitamin A	2%
Vitamin C	8%
Calcium	0%
Iron	2%
Potassium 170mg	5%

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

Apples are a great tasting fruit that has a long shelf life. Commercially, apples can be stored for several months in controlled chambers to delay ripening.

For home storage, most varieties of apples will keep for 2 weeks in the coolest part of the refrigerator. Granny Smith and Fuji apples have more than three times the storage life of other varieties.

Apples are also a great food because most of an apple, including the skin, is suitable for human consumption. The core, from stem to bottom, containing the seeds, is usually not eaten.

A raw apple is 86% water and 14% carbohydrates. A serving of raw apple with skin weighing 154 grams provides 80 calories and a moderate amount of dietary fiber. There are very few micronutrients found in apples.

Understanding and caring for apple trees

It is important for a farmer to know the needs of apple trees to successfully keep the trees healthy, strong, and producing the maximum number of fruit each year. While there are different size apple trees, standard apple trees should be planted in well drained soil 26–30 feet apart, for a total of 85 trees per acre. While apple trees require water in order to help them grow their roots they should not be in standing water.

Apple trees are deciduous trees; they drop their leaves in the fall. During the spring and summer months, apple trees need plenty of sunlight in order to transfer energy from the sun to help supply carbohydrates to the rest of the plant as well as the fruit. In order for apple trees to produce fruit they need pollinators like honey bees to carry pollen from different apple tree varieties in an orchard in order to cross-pollinate the flowers on the apple tree.

Data Sheet: Dairy Cow (Milk)

Milk is a nutritious liquid food produced by the mammary glands of mammals. It is the main source of nutrition for young mammals, including humans, before they are able to digest other types of food. It is not uncommon for humans to consume the milk of other mammals.

When we typically think of dairy milk we think of milk from cows. However, mammals, including sheep, goats, yaks, water buffalo, horses, reindeer, and camels are used as a source of milk for humans around the world.

According to the Purebred Dairy Cattle Association (PDCA), there are seven major dairy cow breeds in the United States (US): Holstein, Brown Swiss, Guernsey, Ayrshire, Jersey, Red and White, and Milking Shorthorn.

When most people think of dairy cows, they imagine a Holstein. Holsteins have distinct white and black or red and white markings. They are the largest of US dairy breeds. A mature Holstein weighs around 700 kilograms (1,500 lb). They are known for their outstanding milk production. An average Holstein cow produces around 10,000 kilograms (23,000 lb) of milk each year.

Dairy milk is extracted from farm animals during or soon after pregnancy. In 2011, dairy farms produced 730 million tons of milk from 260 million dairy cows.

Why is milk on the lunch tray?

Milk

Nutrition Facts	
Serving size	**1 cup (250mL)**
Calories	**130**
	% Daily Value*
Total Fat 5g	**8%**
Saturated Fat 3g	**15%**
Trans Fat 0.2g	
Cholesterol 20mg	
Sodium 110mg	**5%**
Total Carbohydrates 12g	**4%**
Dietary Fiber 0g	
Total Sugars 11g	
Protein 9g	**18%**
Vitamin A	15%
Vitamin C	0%
Vitamin D	45%
Calcium	30%
Iron	0%

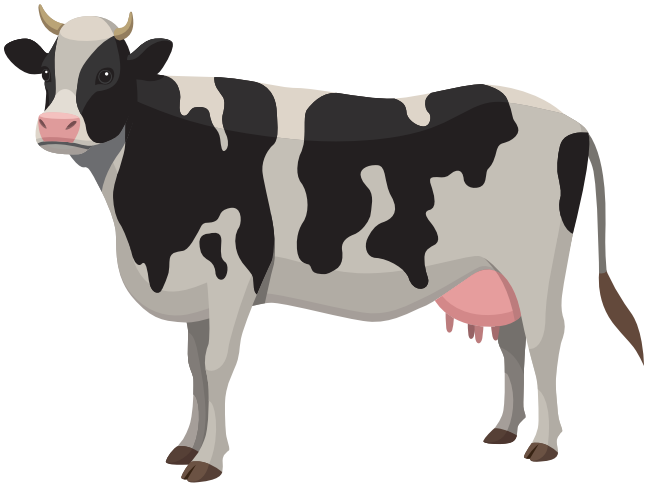
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a human's daily diet. 2,000 calories a day is used for general nutrition advice.

In the US, schools must offer milk at every meal in order to receive money from the federal government. Seventy-one percent of milk served in US school cafeterias is flavored milk such as chocolate milk. Some districts have proposed a ban on flavored milk because of the added sugar in flavored milks.

US dietary guidelines recommend that people 9 years and older consume 3 glasses of fat-free or low-fat milk a day. Some health researchers claim more studies are needed because these recommendations have been influenced by the American dairy industry.

Understanding and caring for cows

It is important for a farmer to know the needs of cattle in order to successfully keep herds healthy, strong, and producing the maximum amount of milk. Each dairy cow and her calf need about 2 acres of land to support them. On this land cattle will graze on alfalfa hay which is a type of grass. In addition to grazing, cattle are given supplemental feed including wheat, barley, oats, and corn as well as minerals in order to keep up a diet needed for energy and production of milk. In addition to land and diet, dairy cows require a fresh supply of water because they can drink anywhere from 30 to 50 gallons of water per day.



Data Sheet: Grass (not on lunch tray)

In many countries around the world, a type of grass called alfalfa hay is an important crop for animal production. It is used for feeding livestock, like cows, as well as ground covering to protect the soil.

Alfalfa plants look like its distant cousin clover. During the flowering season it produces a small cluster of purple flowers that eventually produce 10–20 seeds.

Alfalfa plants grow year round and usually live 4 to 8 years, but can live more than 20 years, depending on the variety and climate. The plant grows to a height of up to 1 meter (3.3 feet), and has a deep root system.

Alfalfa is widely grown throughout the world as food for cattle, and is most often harvested as hay. Alfalfa has the highest feeding value of all hay crops. When grown on soils where it is well adapted, alfalfa is often the highest-yielding plant for grazing.

Why is grass *not* on the food tray?

Grass

Nutrition Facts
Serving size
Calories
% Daily Value*
Total Fat
Saturated Fat
Trans Fat
Cholesterol
Sodium
Total Carbohydrates
Dietary Fiber
Total Sugars
Protein
Vitamin D
Calcium
Iron
Potassium

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

Humans can eat alfalfa sprouts, but once full-grown there is virtually no nutritional value for humans. Our digestive systems cannot absorb the nutrients in these plants. Other animals like cattle, horses, sheep, and goats have a digestive system that can absorb the nutrients from alfalfa plants.

Alfalfa is highly nutritious for cattle, especially for dairy cows, because of its high protein content and digestible fiber.

Understanding and caring for alfalfa plants

It is important for farmers to understand the different stages of development of alfalfa and what it needs to thrive to produce the maximum crop. Alfalfa requires potassium and phosphorus in the soil to grow well. Alfalfa uses sunlight to transfer energy to its leaves so the plant can produce carbohydrates for growth and energy. Alfalfa roots need well drained soil so that they are not in standing water. Alfalfa root systems typically grow 7–10 feet deep in order to reach groundwater. Alfalfa is harvested by cutting it and balling it a few times a year.