

9.1 Fruits

- Types and market forms
- Purchasing fruits
- Storing fruits
- Preparing fruits
- Cooking fruits

9.2 Vegetables

- Types and market forms
- Purchasing vegetables
- Storing vegetables
- Preparing vegetables
- Cooking vegetables

SECTION 9.2 VEGETABLES

Like fruits, vegetables are becoming more important and popular as more focus is being put on healthy living and healthy diets. There has also been an increase in people following vegetarian diets, which has led to restaurant and food-service operations increasing the variety of vegetables they offer. From quick service to fine dining, more vegetables are being incorporated into meals and being put on menus. Vegetables provide nutrition as well as flavor, texture, color, and variety to a meal. Vegetables are not only a side dish but are also main courses themselves.

Study Questions

After studying Section 9.2, you should be able to answer the following questions:

- What are the various types of vegetables?
 - What is hydroponic farming?
 - How do you store produce?
 - What are the various methods for cooking vegetables?
 - How do you maintain the quality of vegetables?
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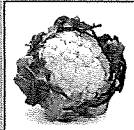


Types and Market Forms

A **vegetable** is an edible, herb-like plant. The parts of vegetables that people eat include the leaves, fruit, stems, roots, tubers, seeds, and flowers. Vegetables can be purchased whole or cut in fresh, frozen, canned, and dried forms. Unlike fruits, vegetables are eaten cooked more often than raw.

Vegetables are often categorized by their botanical origins or by their edible parts. They may be classified as a flower, fruit, green leafy, seed, root/tuber, or stem vegetable.

Flower Vegetables

Flower vegetables include broccoli, cauliflower, Brussels sprouts, and cabbage. When we think of cooking these products, we focus on the “head” of the vegetable. Table 9.5 lists the characteristics of each type of flower vegetable.

Name	Characteristics	Sample Varieties
Broccoli 	<ul style="list-style-type: none"> • Broccoli has a deep green color, tiny clustered buds (florets), and crisp leaves. • To prepare broccoli, cut the stems lengthwise and cook them with the heads attached. This ensures that the cooking times for both the stems and the florets are the same. • USES: Broccoli can be served raw or cooked and is often used in salads or as crudités. 	<ul style="list-style-type: none"> • Green Goliath • Green Comet • Waltham
Cauliflower 	<ul style="list-style-type: none"> • Cauliflower is available in three colors: white, green, and purple. • It has firm stalks and florets, with leaves at its base. The florets and the leaves are edible. • USES: Cauliflower can be served cooked or raw, often used in salads or as crudités. It is often cooked by steaming, stir-frying, or as an ingredient in stews and tempura (tem-POO-rah). Tempura is Japanese-style breaded and deep-fried vegetables. 	<ul style="list-style-type: none"> • Snowdrift • Danish Giant • Romanesco
Cabbage 	<ul style="list-style-type: none"> • Cabbage has thick, waxy leaves that lay tight together and form a large, round head. • Some varieties have curly leaves and a looser form. • Flavors run from sweet to mild to strong. • USES: Cabbage is used often in coleslaw or stir-fried. 	<ul style="list-style-type: none"> • Savoy • Red • Napa
Brussels sprouts 	<ul style="list-style-type: none"> • Brussels sprouts resemble miniature cabbage and grow on a thick stalk. • Flavors tend to be milder than cabbage. • USES: Brussels sprouts are best roasted or steamed. 	<ul style="list-style-type: none"> • Wellington • Brilliant • Millennium

[fast fact]




Did You Know...?

The name "broccoli" comes from the Latin word *brachium*, which means "branch" or "arm." Brocolini is another green vegetable similar to broccoli with small florets and long, thin stalks. It is sometimes called "young broccoli", even though it is really a cross between broccoli and *kai-lan*, Chinese broccoli.

Fruit Vegetables






Fruit vegetables include avocados, cucumbers, eggplants, peppers, squash, and tomatoes. These products come from flowering plants and have seeds, which technically make them fruits. But when we think of how we eat them, we eat them as vegetables. Table 9.6 lists the characteristics of each type of fruit vegetable.

Table 9.6: Types of Fruit Vegetables

Name	Characteristics	Sample Varieties
Avocados 	<ul style="list-style-type: none"> • Avocados have green or black leathery skin. • Their flavor is rich and buttery. They have rich, mild flavor and a smooth, buttery, dense texture. • USES: They are usually served with lime or lemon juice to prevent the flesh from turning brown. Guacamole (gwak-ah-MOE-lee), a favorite traditional Mexican dip, uses mashed avocados as the main ingredient. 	<ul style="list-style-type: none"> • Hass • Bacon • Gwen
Eggplants 	<ul style="list-style-type: none"> • Eggplants are glossy, firm vegetables. Eggplant varieties come in shades of purple from light violet to almost black. They also come in a wide range of sizes and shapes. The most common variety is dark purple-black and ranges from 10 to 12 inches long. • USES: Eggplant is always served cooked, never raw. Babaganoush (BAH-bah-gahn-OOSH), a Middle Eastern dip, uses eggplant as the main ingredient. Eggplant is also used in Italian and Greek cooking. 	<ul style="list-style-type: none"> • Black Beauty • Japanese • White
Bell peppers 	<ul style="list-style-type: none"> • Bell (or sweet) peppers are named for their shape. • All varieties start out green, but as they ripen, their colors change to red, green, yellow, cream, or purple. • Ripe green peppers are not as sweet as the other colors. • USES: Bell peppers can be served raw, as a seasoning in other dishes, or as a main entrée. 	<ul style="list-style-type: none"> • Holland • Bell Boy • Lady Bell

(continued)

Table 9.6: Types of Fruit Vegetables *continued*

Name	Characteristics	Sample Varieties
<p>Chili peppers</p> 	<ul style="list-style-type: none"> • Chili peppers are in the same family as bell peppers, but they are smaller and much hotter. Flavors can run from mild to painfully hot. Most of the hot, spicy flavor is in both the seeds and the membranes, so seeded chili peppers are not quite as hot as whole chili peppers. • Like bell peppers, chili peppers also range in colors, including yellow, red, black, and even purple. • USES: Chili peppers are often used to make sauces and to add flavorful heat to a dish. 	<ul style="list-style-type: none"> • Habanero • Cayenne • Poblano • Jalapeño
<p>Winter squash</p> 	<ul style="list-style-type: none"> • Winter squash have hard shells and large seeds. • Flavors range from sweet to mild to bitter. Some also have a nutty flavor. • USES: They are often baked, steamed, or sautéed. 	<ul style="list-style-type: none"> • Butternut • Acorn • Spaghetti • Banana
<p>Summer squash</p> 	<ul style="list-style-type: none"> • Unlike winter squash, summer squash is much smaller, with soft skin and small seeds that are eaten. • Their flavors are generally mild. • USES: Though summer squash is good raw, it can also be grilled, sautéed, steamed, or baked. 	<ul style="list-style-type: none"> • Yellow Crookneck • Pattypan • Zucchini
<p>Cucumbers</p> 	<ul style="list-style-type: none"> • Cucumbers have a thin skin that is sometimes waxed and an inner core of seeds. • USES: Because of their fresh, mild flavor, cucumbers are excellent in salads or when served with a dip. Cucumbers are an especially popular vegetable used in Middle Eastern cooking. Cucumbers are almost never served cooked outside of Asian cuisine. 	<ul style="list-style-type: none"> • Garden • Japanese • Kirby
<p>Tomato</p> 	<ul style="list-style-type: none"> • The tomato is really a type of berry and is grown in hundreds of varieties. • Tomatoes range in colors from green to yellow to bright red. Tomatoes are at their best when they are vine-ripened. • USES: The versatile tomato is a colorful and nutritious addition to many dishes and a popular ingredient in salads. Sliced tomatoes are also commonly served alone, seasoned with a dash of salt or pepper. Tomatoes may be stewed, fried, grilled, baked, pickled, boiled, or made into sauce or juice. • The size of a tomato determines how it is used. • Large green tomatoes are best for frying. • Jumbo red tomatoes are good plain, stuffed, or baked. • Medium-sized tomatoes are good for slicing. • Overripe tomatoes are excellent in stews, sauces, and casseroles. 	<ul style="list-style-type: none"> • Cherry • Beefsteak • Grape

[fast fact]

Did You Know...?

Ever wonder why people use the phrase "cool as cucumber?" The inner temperature of a cucumber is 20 degrees cooler than the outside air.

[nutrition]

Tomatoes and Lycopene

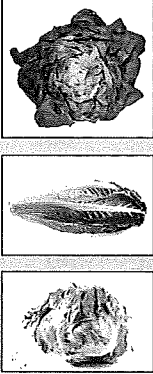

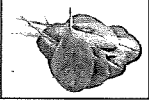

Pigments in fresh fruits and vegetables are sometimes nutrients as well as colors. Lycopene is an example. It is the red pigment of tomatoes (and watermelon, red peppers, etc.). It is a chemical relative of the orange beta-carotene found in carrots. Lycopene is an antioxidant. Antioxidants stop the chain reactions caused by "free-radicals," or highly reactive oxidative (destructive) changes that can occur in body tissues.

There is more research to be done in the area of lycopene nutrition. There is no such thing as lycopene-deficiency disease as far as researchers know at this point, so it is not considered a necessary vitamin. But the effect of antioxidants on the body looks very promising, as nutritionists consider the big picture of good health.

Raw tomatoes are not as rich in lycopene as cooked tomatoes. The body can use it better from a cooked tomato, and even better if there is some oil or fat in the same meal.

Green Leafy Vegetables

Green leafy vegetables include various types of lettuce, mustard greens, spinach, and Swiss chard. Green leafy vegetables are very high in vitamins A and C, iron, and magnesium. Table 9.7 lists the characteristics of each type of green leafy vegetable.

Table 9.7: Types of Green Leafy Vegetables		
Name	Characteristics	Sample varieties
<p>Lettuce</p> 	<ul style="list-style-type: none"> • There are hundreds of varieties of lettuce, with varying flavors, colors, and shapes. • In the United States, there are four main categories of lettuce: butterhead, crisphead, leaf, and romaine. • Crisphead lettuce, such as iceberg lettuce, has light-green leaves that are tightly packed together. Its mild flavor makes it good to use in salads and as a garnish for sandwiches. • Butterhead has small, round, loosely formed heads with a soft, buttery texture. • Unlike iceberg lettuce, both romaine and leaf lettuce are loosely packed. Their leaves grow upward in bunches, and their edges are slightly ruffled. Leaf lettuce has a milder flavor than romaine lettuce, and is also good in salads. The crisp, more flavorful romaine lettuce is often used in Caesar salad. • USES: Lettuce is used in salads or as garnish on a sandwich or entrée. 	<ul style="list-style-type: none"> • Iceberg • Romaine • Bibb
<p>Mustard greens</p> 	<ul style="list-style-type: none"> • Mustard greens have a bitter, strong flavor. • The leaves are usually dark green. • USES: Mustard is served raw, in salads, or lightly sautéed with vinegar and herbs. 	<ul style="list-style-type: none"> • Curled • Asian
<p>Spinach</p> 	<ul style="list-style-type: none"> • Spinach is one of the most adaptable greens used in cooking. • It has dark green leaves that can be smooth or curly. • USES: With a slightly bitter flavor, spinach is often used in soups, salads, and casseroles. 	<ul style="list-style-type: none"> • Baby • Savoy • Smooth Leaf
<p>Swiss chard</p> 	<ul style="list-style-type: none"> • Swiss chard is actually a type of beet that does not have a root. • The flavor of chard is rich and similar to spinach. • USES: It produces dark green, wide leaves that are often steamed, sautéed, and used in soups. 	<ul style="list-style-type: none"> • Red • White • Multicolor

Spring Greens and Field Mixes

Not too long ago, a little iceberg lettuce with mayonnaise dressing was considered a dinner salad. Consumers today are interested in more flavorful and nutritious salad greens. Variety lettuce mixes have gained popularity in recent years, both in restaurants and grocery stores.

Spring greens, field greens, field mixes, and other terms are used to describe a mix of assorted salad greens. Some greens are lettuces; some are related to cabbage; others,

like radicchio, are chicory. Even leafy herbs like cilantro find their way into flavorful salads.

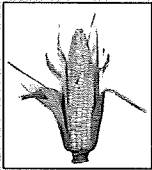

Spring greens are the new leaves of leafy vegetables that had been harvested the previous season. Some **brassica** (cabbage family) and chicories are strong enough to survive the winter. When they begin to send up new growth in March or early April, the leaves are tender, bright, and flavorful. They are often found in fresh, spring salads.

Field mixes may be more tender and can be planted in the spring for harvest a few weeks later. **Mesclun mix** is a seed blend that includes a variety of leafy lettuce and other greens. Other single greens may be added to blends at harvest. These assorted leaves may have a bold flavor like arugula, be peppery like watercress, savory like chive, or tangy like sorrel. Others are milder, like romaine or frisée.


Combine these mixes with nuts, dried fruit, and goat cheese. When served with bread, they make a nutritious meal. Or toss them with ripe tomatoes, olive oil and wine vinegar, balsamic vinegar, or lemon juice. Then they make a colorful and interesting side dish.

Seed Vegetables

Seed vegetables include corn, peas, and beans. In this category, the edible portions of the vegetable (kernels, peas) are actually seeds. Table 9.8 lists the characteristics of each type of seed vegetable.

Name	Characteristics	Sample varieties
Corn 	<ul style="list-style-type: none"> • Flavors vary among the white, yellow, and bicolored varieties. • Popcorn is a variety of corn grown especially for its small ears and pointed kernels that explode when heated. • USES: Sweet corn, served on the cob, can be grilled or boiled. It should be served very soon after it is picked. If not, its natural sugars will begin to turn to starch, making the corn less sweet and much chewier. 	<ul style="list-style-type: none"> • Butter and Sugar • Bantam • Silver Queen
Peas 	<ul style="list-style-type: none"> • The most common peas are green garden peas. They have a sweet, delicate flavor. • Peas are a colorful addition to salads, soups, and garnishes. • USES: Some peas can be eaten in their pods. Snow peas, for example, are often used in Asian cooking and have firm skin and a light flavor. 	<ul style="list-style-type: none"> • English • Snow • Sugar Snap

(continued)

Table 9.8: Types of Seed Vegetables <i>continued</i>		
Name	Characteristics	Sample varieties
<p>Beans</p> 	<ul style="list-style-type: none"> • Fresh beans include green beans, yellow wax beans, and French haricot verts (HAIR-ee-ko VAIR). These beans are small and are most often eaten while still in the pod, its long, outer shell. • Lima beans and fava beans are examples of beans that are shelled, or removed from the pod. They are larger and more firm than green beans. They stand up well to cooking. • USES: Fresh beans are very good sautéed, steamed, or microwaved. Dried, shelled beans usually need to be soaked or boiled first, and are best in soups, stews, and curries. All beans add flavor and color to soups and salads and are nutritious side dishes. 	<ul style="list-style-type: none"> • Green • Yellow Wax • Lima • Fava

[fast fact]

Did You Know...?

1. The United States is the leading producer and exporter of corn.
2. The United States produces two-fifths of the world's supply of corn.
3. Corn is also called maize.

Root and Tuber Vegetables

Root vegetables and tubers are grouped together because part, or all, of the part people eat grows underground. **Root vegetables** are rich in sugars, starches, vitamins, and minerals. These plants exist both above and below ground. A single root extends into the ground and provides nutrients to the leafy green part of the vegetable that is above the ground. Some common root vegetables include carrots, beets, radishes, turnips, and onions.

Sweet Onions

About 100 years ago, a farmer brought onion seeds from the island of Corsica (near Italy) to his home in Walla Walla, Washington. He planted them and thus began Walla Walla Sweet Onions. Similar varieties were farmed in Vidalia, Georgia, on the Hawaiian Island of Maui, and in Nevada.




These onions are very popular, especially for dishes that call for raw onions. They contain a respectable amount of vitamin C. They have a greater water content than regular onions. They will last in a cool, dark, ventilated storage place for four to six weeks without refrigeration. Yellow onions can be kept longer, but they are more pungent.

The thought of an onion actually being sweet might seem odd. They have a fairly high sugar content, so they taste a little bit sweet, especially after being sautéed in butter.








Perhaps the best thing about sweet onions is their low sulfur content, which reduces stomach upset. Onions can cause stomachaches in some people. The lower sulfur also makes it easier to slice a sweet onion without crying.

Tuber vegetables include potatoes, sweet potatoes, and yams. Tubers are enlarged, bulbous roots capable of generating a new plant. Tubers are actually fat, underground stems. Table 9.9 lists the characteristics of each type of root and tuber vegetable.

Table 9.9: Types of Root and Tuber Vegetables

Name	Characteristics	Sample varieties
Carrots 	<ul style="list-style-type: none"> Carrots contain a large amount of carotene, a pigment easily convertible to vitamin A. USES: Carrots can be served raw, as crudités, as a garnish, or as an ingredient in salads. Carrots are fundamental to mirepoix. Cooked carrots make excellent side dishes and additions to soups. Carrots are even used in desserts, cooked or raw. 	<ul style="list-style-type: none"> Imperator Baby Rainbow
Beets 	<ul style="list-style-type: none"> Beets were originally grown for their tops, not their roots; today, however, the roots are far more commonly used. Colors run from red to yellow to white. Cooks prefer smaller beets to larger ones for two reasons: their appearance is better, and they cook faster than larger beets. USES: Beets are popular in salads. Pickled beets add spice and zest to salads or to a side dish. They may also be steamed, baked, or roasted. 	<ul style="list-style-type: none"> Red Ace Chioggia Golden
Radishes 	<ul style="list-style-type: none"> Radishes are small, round roots that are available in many colors, from deep red to pale cream. USES: Their crisp texture and peppery flavor make them a flavorful and colorful addition to salads. They can be decoratively cut as a garnish or served as an appetizer with vegetable dip. 	<ul style="list-style-type: none"> Cherry Belle Snow Belle Icicle Short Top

(continued)

Table 9.9: Types of Root and Tuber Vegetables <i>continued</i>		
Name	Characteristics	Sample varieties
Turnips 	<ul style="list-style-type: none"> • Like radishes, turnips have a hot, peppery flavor that is best when baked. • They are larger than radishes and usually have a rose-colored skin and bright white flesh. • USES: Turnips may be baked, boiled, steamed, or mashed. 	<ul style="list-style-type: none"> • Baby • White • Yellow
Onions 	<ul style="list-style-type: none"> • All varieties of onions have a strong flavor and aroma, and can be used as seasonings. • USES: Common, or bulb onions, like white, yellow, or red, are best when sliced or chopped for use in stuffing or casseroles. Small onions, like pearl onions, are best for boiling or cooking with roasts and stews. They can also be prepared whole and served as a side dish. 	<ul style="list-style-type: none"> • Bermuda • Vidalia • Pearl
Scallions and shallots  	<ul style="list-style-type: none"> • Green onions, or scallions, are actually common onions that are pulled before they are mature. • The slender, dark green leaves of green onions are attached to the thick white bulb. • Shallots are shaped like small bulb onions. They separate into small cloves when broken apart. • USES: The mild flavor of green onions and shallots makes them a great addition to meat dishes and sauces, or for use in salads. 	<ul style="list-style-type: none"> • Gray • Dutch Yellow • French Red
Leeks 	<ul style="list-style-type: none"> • Leeks resemble large green onions. They have the mildest flavor in the onion family. • USES: They are best when baked or grilled, and are often used in stocks, sauces, and soups. 	<ul style="list-style-type: none"> • Musselburgh • Edison • Oarsman
Potatoes 	<ul style="list-style-type: none"> • Potatoes are available in many varieties, with different flavors, sizes, textures, and colors. • Potatoes should all be firm, free of marks, and well shaped. • USES: Moist potatoes are well suited to boiling. Drier potatoes are better for baking. 	<ul style="list-style-type: none"> • Russet • Red • New • Fingerling
Sweet potatoes 	<ul style="list-style-type: none"> • The sweet potato's color comes from beta-carotene. • Its thick skin is not usually eaten. • Colors can range from light yellow to deep orange. • Sweet potatoes and potatoes actually come from different botanical families. Both are root tubers. • USES: Sweet potatoes are best when boiled, baked, or puréed for soups. 	<ul style="list-style-type: none"> • Goldrush • Georgia Red • Velvet

(continued)