

# Variety Recommendations for Mississippi Vegetable Gardens



Growing a vegetable garden is a favorite hobby for many Mississippi gardeners. The joy of planting, growing, harvesting, and eating the very food that you grew has an appeal for many people. Knowing which crops and varieties to select is an important step to gardening successfully. This publication will help vegetable gardeners select proper varieties to grow in Mississippi. Varieties recommended here are not the only ones available for each crop, so check with your local provider or favorite seed source to find plants or seeds. AAS stands for All-American Selections.

## Disease Resistance

Garden vegetables can be attacked by many pathogens, including various fungi, bacteria, viruses, and nematodes. These pathogens can cause disease in infected plants and reduce crop yields. To minimize their impact,

Mississippi gardeners must practice disease management. Several disease-management measures are available to help reduce disease incidence and severity; a general list of these measures is available in MSU Extension Publication 3616 *Mississippi Vegetable Gardener's Guide*. When developing a disease management plan, it is important to remember a few key points:

- No single disease-management measure is effective against all diseases that can affect a crop. Using multiple management measures is recommended.
- Timing is important! While some measures can be practiced during the growing season, others must occur before or after the growing season.
- Every disease-management measure is not effective against every disease. The most effective measures for any garden depend on the specific diseases present.

Accurate diagnosis/identification is the first step in disease management.

- Sometimes, in a home garden setting, there are few or no effective disease-management measures against a particular disease. The best option may be to choose another variety.

Two of the most important disease-management measures that can be practiced before planting are choosing varieties suitable for the specific growing region and choosing varieties with resistance to common diseases in that region. Using resistance is the best way to manage for diseases because plants with resistance (or tolerance) to a particular pathogen/disease can often escape infection or have reduced levels of disease severity (Figure 1).



Figure 1. Resistance can sometimes be the difference between a successful and unsuccessful crop. Cucumber varieties susceptible (left) and resistant (right) to downy mildew are pictured. Credit: Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org.

Resistance is specific to a particular pathogen/disease and is not available for every pathogen/disease. Some varieties have resistance to multiple pathogens/diseases, as with several tomato varieties. Other varieties, such as the popular heirloom varieties, often do not have any resistance. When available, select varieties with resistance to diseases known to occur in a particular region or within a planting, as this can help reduce disease-management efforts during the growing season.

For help determining which diseases are common in your growing region and identifying diseases, consult state or regional Extension publications, such as MSU Extension Publication 3175 *Common Diseases of Tomatoes*. Disease resistance codes indicate the disease(s) for which resistance is available in a variety. These codes often are listed in seed company catalogs and on websites, but they may differ among companies. Check each company's resistance code

definitions when purchasing vegetable varieties with resistance to specific diseases. This publication will give you a head start, as the available disease resistance is listed here for each of the vegetable varieties recommended for Mississippi.

## Resistance/Tolerance Codes

Resistance levels are tolerant, intermediate, and high. Resistance codes used in this publication (Table 1) were derived from several sources and may not match exactly those found in seed company resources. Check seed packages, plant labels, or seed company resources for details.

Table 1. Resistance codes used in this publication.

| Code     | Disease/Pathogen              |
|----------|-------------------------------|
| A        | Anthraxnose                   |
| AS       | Alternaria Stem Canker        |
| BLS*     | Bacterial Leaf Spot           |
| BMV      | Bean Mosaic Virus             |
| BR       | Black Rot                     |
| C        | Cercospora                    |
| CLB      | Corn Leaf Blight              |
| CMV      | Cucumber Mosaic Virus         |
| CVYV     | Cucumber Vein Yellowing Virus |
| DM       | Downy Mildew                  |
| F* (1,2) | Fusarium Wilt (Race 1 or 2)   |
| FOR      | Fusarium Crown and Root Rot   |
| FY       | Fusarium Yellows              |
| GLS      | Gray Leaf Spot                |
| HB       | Halo Blight                   |
| LB       | Late Blight                   |
| LM*      | Leaf Mold                     |
| LMV      | Lettuce Mosaic Virus          |
| MDMV     | Maize Dwarf Mosaic Virus      |
| N        | Nematodes                     |
| PM       | Powdery Mildew                |
| PRR      | Pink Root Rot                 |
| PRSV     | Papaya Ringspot Virus         |
| PVY      | Potato Virus Y                |
| R        | Rhizoctonia                   |
| S        | Scab                          |
| SW       | Stewart's Wilt                |
| TMV      | Tobacco Mosaic Virus          |
| ToMV     | Tomato Mosaic Virus           |
| TSWV     | Tomato Spotted Wilt Virus     |
| V*       | Verticillium Wilt             |
| WMV      | Watermelon Mosaic Virus       |
| ZYMV     | Zucchini Yellow Mosaic Virus  |

\* Multiple races of this pathogen exist. Indicated resistance may not include all known races.

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*For the crop varieties listed here, the variety name is given first, followed by the number of days to harvest, the variety description, and a list of known disease resistances.*

## Asparagus

Asparagus is a perennial plant that can be grown successfully in many parts of the state, but it does best in northern counties. It can grow in a variety of soil types but prefers well-drained soils high in organic matter. In poorly drained soils, it loses vigor and is more susceptible to root rot.

Since asparagus grows in the same location for several years, it is important to properly prepare the soil before planting. Start about a year before planting by mixing in large quantities of organic matter, such as composted manure, compost, and green manure crops. Mix 2–3 pounds of 13-13-13 fertilizer per 100 square feet into the soil, and lime to a pH of 6.0–6.5, following soil test results.

In early spring, plant 1-year-old crowns 4 inches deep in clay soils and 6 inches deep in sandy-textured soils. Do not use older crowns or pieces of old crowns dug from an existing bed. Dig a trench 12–18 inches wide to the desired planting depth in the prepared planting area. Space crowns 12–15 inches apart on the bottom of the trench. Spread the roots, being sure the crown is right side up. Cover crowns with 2 inches of soil, and, as plants grow, gradually fill in the trench with soil. Space rows 4–5 feet apart.

Always keep beds free of weeds. Remove all brown, frost-killed stalks in winter and cover the bed with 2–3 inches of composted manure. Each spring before growth begins, broadcast a 6-8-8 fertilizer at a rate of 2–3 pounds per 25 feet of row, working it lightly into the surface. Repeat fertilization after harvest.

Harvest can begin the third year. Harvest all spears, large and small, when they are 6–8 inches long and before leaf bracts at the tip begin to open. Cut spears 1–3 inches below the surface, trying not to injure spears developing below the surface, or spears may snap at ground level. When the diameter of most of the spears drops to the size of a pencil, stop harvest for the year. On young beds, harvest for only 2–3 weeks. Harvest established beds for up to 8 weeks. Do not cut until after frost kills it in late fall. Control insects like cutworms attacking spears during harvest with labeled insecticides.

To grow plants from seed, soak seeds in aerated water for 3 days. Use a small, electric aquarium air pump with a bubbler stone to aerate the soaking seeds. Plant individual seeds about 1 inch deep in small pots or containers. Plants should be large enough to set in the garden in 12–14 weeks. Treat seedlings the same as 1-year-old crowns, using the

same planting depth and spacing. During the first season, gradually fill in the trench.

Asparagus has both male and female plants. Male plants usually produce spears of larger diameter than female plants. New all-male varieties are now available, and they prevent volunteers from forming. Female plants produce red berries in late summer, which may spread asparagus to other garden areas.

### Varieties

Jersey Giant – Hybrid 100% male; producer of larger, uniform spears; excellent vigor; F, R

Jersey Supreme – High yield potential; F

Mary Washington – Leading home garden variety

Millennium – Cold hardy and tolerant of many soil types; uniform spears; vigorous; R

Purple Passion – Thick spears; very productive; turns green when cooked

## Beans

All garden beans are sensitive to cold soil and cold air temperatures, but colored bean seeds have more cold tolerance than white beans. Seeds planted in cold, wet soils may rot.

Soil type is important to bean seed germination. The two large seed halves (cotyledons) must come through the soil surface. Clay or compacted soils hold the cotyledons and hinder germination. Cover seeds with a non-crusting material, or add sand, peat moss, vermiculite, or perlite to the soil. If a crust forms, carefully break or sprinkle lightly with water several times to soften and aid germination. All beans are nitrogen-fixing plants, so be careful to avoid heavy nitrogen fertilization and nitrogen-rich soils.

Major problems with beans are blossom/pod shedding, diseases, and insects. Both too much and too little moisture cause blooms and small pods to shed. Shedding also occurs when summer temperatures are extremely high. Manage most diseases by buying western-grown seeds, selecting disease-resistant varieties, using treated seed, rotating land, and not working or harvesting beans when leaves are wet. Major insect pests are bean leaf beetle (round holes in leaves) and Mexican bean beetle (lace-like leaves).

**Bush snap beans** can be green or yellow and round or flat. They are sensitive to hot, dry weather, so plant them

early. Late-planted bush beans do not set a big crop, and the pods that develop are poor quality. Bush beans should be planted in a broad band of several closely spaced rows. Harvest beans at the tender snap stage, but any snap bean variety can be allowed to grow to the green shell stage and be used much like lima beans and southern peas. Most bush snap bean varieties require 50–60 days from planting to harvest.

### **Varieties**

Affirmed – 56; upright, compact; high yielder; straight, 5–6 inches long; uniform; A, BMV, HB

Contender – 55; old variety; colored seed; pale green, oval pod; frequently curved; early; fresh-use type that develops fiber rapidly; BMV

Derby – 40; white seed; round; long, slim, straight pods; slow seed development; BMV

E.Z. Pick – 55; dark green; 5–6 inches long; perfect for canning; BMV

Provider – 50; easy to grow; adaptable to soils; purple seeds; BMV, PM

**Green-shell beans are grown** like bush snap beans.

### **Varieties**

French's Horticultural – 68; pods/beans are cream colored splashed with scarlet; semi-runner type

King Horticultural – 75; like French's Horticultural

Taylor's Horticultural – 75; non-running plant; pods and beans like French's Horticultural

**Pole snap beans** are more heat tolerant and extend the harvest of snap beans through the summer. Support vines with cane poles, strings, or a strong trellis, allowing for 6–8 feet of growth. Use barbed wire as the top wire to prevent poles and strings from slipping. Support posts to prevent trellis collapse in wet weather. When exposed to very hot summer temperatures and dry soils, beans drop their blooms and small pods. Harvest all beans to keep vines producing. Pole beans yield more than bush beans because they produce over a longer time. Nitrogen-rich soils result in excessive vine growth and fewer beans. Most pole snap bean varieties require 65–70 days from planting to first harvest.

### **Varieties**

Carminat – 62; slender, purple pods; 8–9 inches; rich, sweet flavor; BMV

Rattlesnake – 65; flavorful heirloom; 8- to 10-inch pods; green with purple stripes; BMV

Kentucky Blue – 63; pods 6–7 inches long; round; straight; good flavor; BMV

Louisiana Purple – 65; purple pods that turn green when cooked

**Yardlong beans** are pole beans that reach 2 feet in length. At this stage, they are past their prime and should be used like southern peas. Harvest when pods are 10–18 inches long for use as a snap bean.

### **Varieties**

Python – 80; smooth, dark green, glossy pods; stringless 16- to 20-inch pods

**Bush lima beans** (butter beans) are more sensitive to cold than snap beans, so delay planting until the soil temperature is at least 65 degrees. Both small and large seed types are used as green-shell beans. The small-seed limas usually produce better than the large-seed types. Most varieties require about 65 days from planting to harvest. Use treated, fresh seeds. Do not use previous dry garden beans for the current year's seeds because of disease carryover problems. The major disease is stem anthracnose, which is managed by using western-grown seeds and planting rotation in the garden. Do not plant lima beans in the same garden location as last year.

### **Varieties**

Dixie Butterpea – 75; white seed; three to four small, plump beans per pod; sets pods under high temperatures; large and vigorous plants; late maturing

Early Thorogreen – 72; small, flat, rich-green baby lima; heavily productive; sets throughout the plant; very adaptable and vigorous; green-seeded Henderson Bush  
Henderson Bush – 68; creamy white seed; three to four small, flat beans per pod; most popular older variety; small plant; productive; processing type

Jackson Wonder – 65; speckled seed, buff with purple markings; beans are small and greenish-white with purple markings at green shell stage; medium-sized plant

**Pole lima beans are grown** like pole snap beans.

### **Varieties**

Florida Speckled – 85; greenish with purple at green shell stage; bears well in hot weather

King of the Garden – 85; large clusters of 6-inch pods with cream-colored seeds; easy to shell

## Beets

Beets require cool temperatures and loose, moist soil for best production. An adequate supply of potassium (K) is necessary for roots to form. Test soil before planting. Beets do not tolerate acid soils. Beets are shallow-rooted, so don't let the soil dry out. Can be grown in spring and fall.

Most beet seeds produce a small cluster of seedlings when germinating. Even with individually placed seeds, thinning is necessary for correct plant spacing. Thin seedlings to stand 2 inches apart. Beet seeds are slow to germinate, so mix in some radish seeds to mark the row. Poor stands of seedlings can often be traced to planting too deeply or crusting soils after rain or irrigation.

Black spots in beets may indicate a shortage of boron in sandy soil. Dissolve 1 tablespoon of household borax in 3 gallons of water and apply to 100 feet of garden row. Reduce the amount of borax for shorter rows because too much boron can be toxic to plants.

Do not discard beet leaves; they are an excellent leafy green. You can also use the thinnings of young beets as greens. Beets require 60–70 days from planting to harvest. Harvested beets can be stored in the refrigerator in a plastic bag for several weeks.

### Varieties

Boro – 50; fast; tough and reliable; smooth, rich red skin; excellent flavor

Burpee's Red Ball – 60; uniform; smooth skin; globe-shaped; 3-inch, dark red roots; erect tops; medium height; red and green

Cylindra – 58; long, cylinder root with uniform slices; dark red; 6 inches long; excellent as greens; C, S

Touchstone Gold – 55; gold flesh retains color when cooked; sweet flavor

## Broccoli

Broccoli is one of the most nutritious vegetables. The edible parts are the compact clusters of unopened flower buds and the attached stems. Each plant produces one large central head and often several smaller side heads following harvest of the main head. This cool-season vegetable grows in all parts of Mississippi in spring and fall, with fall production often more successful.

For spring broccoli, start plants in a cold frame 6–8 weeks before setting plants in the garden. This means starting in what seems like mid-winter. Grow seedlings at cool temperatures and spaced at least one-half inch apart in rows 4–6 inches apart so they are hardy and able to withstand cold temperatures when transplanted.

Seedlings can be grown in individual cups or plastic trays. Seedlings exposed to temperatures below 45°F for 2 weeks or more may form small flower heads and be unproductive. Seedlings grown indoors, in a hot bed, or in a greenhouse often are killed by the first cold night after transplanting to the garden in early spring. Harden these seedlings for 1–2 weeks in a cold frame before setting them out. Use 1 cup of starter solution for each plant when transplanting to the garden, according to soil test results.

Side-dress broccoli plants with a nitrogen fertilizer as soon as active growth begins after transplanting. A second side-dressing just before heading will increase the center heads.

For fall broccoli, plant seeds directly in the garden where they are to grow. Keep the seed bed moist to prevent crusting and to aid germination. Do not delay planting past recommended dates waiting for moisture or for temperatures to cool. If water is not available to keep the seed bed and seedlings moist, do not direct seed.

Fall broccoli is better in quality than spring broccoli because it matures as the weather is getting cooler, but fall broccoli has more insect problems than the spring crop. Control the major worm problems by spraying or dusting with a biological control containing *Bacillus thuringiensis*.

Harvest broccoli while the cluster of flower buds is still tight. Open yellow flowers indicate overmaturity. A hollow stalk may indicate a shortage of boron in the garden soil. Dissolve 1 tablespoon of household borax in 3 gallons of water and apply it to 100 feet of garden row. Reduce the amount of borax for shorter rows because too much boron can be toxic to plants.

### Varieties

Avenger – 102; very attractive heads are tight and heavy with short bracts, thick stems, and small beads; high percentage of crown cut; excellent holding ability

Gypsy – 60; tall, uniform plant; performs well under moderately warm conditions; good for bunching or fresh market; DM

Imperial – 66; performs best during long day-length conditions with moderate heat; mid to late maturing; has a tight dome with nice, small, dark green beads; performs well for bunch, crown cuts, and processing; excellent post-harvest shelf life

Lieutenant – 65; ideal choice; produces high-quality crowns with an excellent shape; performs well in warm growing conditions

Marathon – 68; widely adaptable industry standard; outstanding results for fresh market bunching, processing, and crown-cut market; high dome, small bead, heavy head

Millennium – 105; highly adaptable; crown-cut type yielding high-domed heads with very small beads and exceptionally uniform heads; round; good heat tolerance; fewer side shoots; anthocyanin-free; strong post-harvest color retention

Waltham 29 – 74; medium-green; 3- to 6-inch heads produce abundant side shoots harvested 1–3 weeks after the main head has been cut; good cold tolerance

## Brussels Sprouts

This cold-hardy, slow-growing vegetable is not frequently grown in Mississippi gardens. The cool weather of our spring and fall seasons doesn't last long enough for maximum yields. When attempting a spring crop, set plants early and side-dress as soon as active plant growth begins and again when sprouts form. For a fall crop, start plants in midsummer. Set plants 24 inches apart and keep well-watered. Sprouts develop where leaves join the main stem. As sprouts develop, do not remove leaves. Lower sprouts mature first, and you can cut leaves when you harvest sprouts. Heat causes soft sprouts. Aphids often infest developing sprouts, making them inedible.

### Varieties

Gladius – 98; uniform blue-green sprouts; resists lodging; early to mid-fall harvest

Jade Cross – 90; hybrid; vigorous plant; uniform sprouts closely spaced; 1.5-inch diameter

Long Island – 90; sprouts 1.5 inches in diameter; firm plants; 32–34 inches tall

## Cabbage

Cabbage can be green or red and smooth or curly (savoy) and can have flat or pointed heads. It is grown as described for broccoli in both spring and fall. When purchasing cabbage plants in spring, beware of large plants or those with stems as large as a pencil. Bundled, bare-root transplants with large, woody stems may flower without forming a head.

When growing transplants, select varieties that mature over several weeks to extend the harvest season from a single planting. Purchased transplants of a non-hybrid (open-pollinated) variety mature over several weeks. Use starter solution when setting transplants in the garden.

As cabbage matures, head-splitting results from the pressure of water taken up by the plants after the heads are solid. Soft heads indicate lack of maturity. Aphids and cabbage worms are serious problems for cabbage. The major diseases, black leg and black rot, are seedborne and

difficult to manage except by purchasing disease-free seeds and plants.

### Varieties

Grand Vantage – 75; an exciting, new fresh-market variety with a dense solid interior, short core, excellent tight wrapper leaves, and strong frame; very adaptable main-season variety with good holding ability and excellent yield potential; FY

Platinum Dynasty – 65; widely adapted; excellent uniformity of heavy heads; good holding ability; BR, FY

Red Dynasty – 76; main-season cabbage suitable for fresh or processing market; excellent internal color; large frame; heads hold well; BR, FY

Romanov – 90; dense, round shape with deep red heads; tip-burn resistance

Savoy Ace – 78; hybrid; deep green heads; round; earlier and smaller than Savoy King

Savoy King – 90; heavy yields; semi-flat, short cored, good-textured heads; excellent for fresh market use; great flavor; widely adapted

## Cabbage, Chinese

Several different vegetables are commonly called Chinese cabbage. There are both heading and non-heading types. Michihli types form tall, cylindrical heads. Napa types form heads similar to loose heads of savoy cabbage. Pak choi or bok choi types, often called celery cabbage, resemble Swiss chard and are non-heading. All types rapidly go to seed in warm weather, which makes them better suited for fall rather than spring gardens. Sow seeds in early fall and thin seedlings to stand 8–12 inches apart.

### Varieties

China Gold – 65; excellent color; compact frame; good weight; very slow bolting; tolerant to tip-burn and some club-root races

China Star – 69; large-headed; dark green external and internal color; slow bolting; tolerant to tip-burn and black speck

## Cantaloupes (Muskmelons)

Cantaloupes are popular with gardeners who have plenty of space to accommodate their spreading vines. They do not tolerate cool temperatures or transplanting very well, so wait until the soil is warm before planting seeds. To warm the soil, use black plastic mulch, floating row covers, or plastic tunnels. Start transplants in individual containers like peat pots and move them to the garden shortly after the seeds germinate and the soil is warm.



Cantaloupes can be grown on a trellis, but the fruit must be supported. Control the vigorous vines by pinching out the growing terminals once the melon crop has set. Bees are necessary for pollination. They do not cross-pollinate with cucumbers, squash, or watermelons. Poor flavor and quality are attributed to growing conditions (excess water while ripening, low soil fertility, and hot, cloudy weather). Many newer hybrid varieties are resistant to major diseases.

### **Varieties**

Ambrosia – 86; hybrid; excellent flavor; light orange flesh; 4 pounds; DM, PM

Aphrodite – 72; compacted vines are good for small spaces; large fruits; 6 pounds; F, PM

Athena – 79; widely adaptable; good shelf-life; F, PM

Magnum – 45; new hybrid; early; deep orange flesh; 3 pounds

Sarah's Choice – 76; most flavorful selection; oval fruit; 3 pounds; F, PM

## **Carrots**

Mississippi's high clay content and poorly drained soils are not ideal for developing long, straight carrots, so it may be best to select shorter growing varieties. Carrots are sensitive to acid soils. Raised beds filled with improved soil allow you to grow carrots where they wouldn't grow in native soil.

Carrot seeds are slow to germinate, and germination may not be uniform. Hard, packing rains following planting and before germination result in a poor stand or no stand at all. Mix some radish seeds with carrot seeds to mark the row. Carrot seeds germinate best in warm, moist soil. Cover the planted row with clear plastic or a floating row cover to help get a good stand. Remove the plastic immediately after germination. To aid emergence, cover the seeds with a non-crusting material like sawdust, sand, or vermiculite, and keep the newly seeded row moist. Thin seedlings to stand about 2 inches apart.

Green shoulders on carrots result from sunburn. Pull a little soil to the row when cultivating to keep carrots covered. Misshapen, twisted, and forked carrots result from clay soils, sticks, roots, stones, or root-knot nematodes.

### **Varieties**

Yaya – 56; early; 5–6 inches long; compact tops

Hercules – 65; widely adapted; 6–7 inches long; stores well

Bolero – 75; 7–8 inches long; slightly tapered; for fresh and storage; fall and winter harvest

## **Cauliflower**

Cauliflower is grown much like broccoli and cabbage, but plants are less tolerant of heat and cold. Start from transplants in spring. Direct seed or use transplants in fall. Select early-maturing varieties to avoid late-spring heat and late-fall cold. Cauliflower plants are more sensitive to spring freezes than broccoli or cabbage.

Cauliflower plants must be kept growing vigorously from germination through harvest. Any interruption in growth caused by drought, heat, or cold can cause the edible head to fail to develop (button). Use a starter solution when setting plants in the garden. Some of the new cauliflower hybrids are self-blanching (leaves fold over the developing head), eliminating the need for tying outer leaves to ensure a white head. With non-self-blanching types, tie the large outer leaves loosely together over the center of the plant when the small head is 2–3 inches in diameter. The head should be ready to harvest 7–12 days after tying the leaves. Cut the head before it develops a coarse "rice" appearance. Cauliflower plants make only a single head. Downy mildew can be a serious disease problem. Aphids, cabbage loopers, and imported cabbage moths are major insect pests.

### **Varieties**

Absolute – 90; white and comparable to Apex; very white curd; upright plant habit; superior wrap and jacket protect a well-domed curl

Aerospace – 65; white; high head placements for easy harvest; dense, uniform heads with dome shape; good internal head wrap provides excellent protection

Flame Star – 80; yellow; a semi-orange variety is high-yielding; ideal for specialty color market; produces smooth, dense, well-shaped curls

Graffiti – 80; red; large; vigorous open plant produces smooth, dome-shaped heads; must have full sun to obtain full purple color

Puntoverde – 78; Romanesco; attractive; high-quality heads for summer or fall harvest; also suitable for winter or early spring production in areas with mild winters; strong, rugged plants; outperforms typical Romanesco types under stressful weather conditions

Snow Crown – 55; white; early-maturing; superior uniformity; 7- to 8-inch, firm heads

Veronica – 78; Romanesco; pointed; spiraled pinnacles; best planted 18 inches apart in summer for fall harvest; slightly nutty; more flavorful than white varieties; FY

## **Chard, Swiss**

Swiss chard is a close relative of the garden beet that does not develop an edible root. Grow chard just like beets, but space the plants 4–6 inches apart in the row. Harvest



chard by cutting the entire plant or removing the large outer leaves, leaving the smaller leaves to develop for future harvests. If watered, spring-planted chard may survive the summer to produce leaves for fall harvest. The green portion of the leaf can be stripped off, leaving the broad mid-rib, which can be steamed and eaten like asparagus.

There are several varieties of chard; the biggest difference among them is that some varieties have brightly colored stems. The red-stemmed varieties may be mistaken for rhubarb but cannot be used as a rhubarb substitute. Because of its upright growth and large, attractive leaves, chard can be used as an ornamental in borders and display beds.

### **Varieties**

Bright Lights – 28; red, yellow, purple, and green petioles

Bright Yellow – 28; yellow stems and veins; long, thick stems

Charbell – 35; vigorous; bolt-resistant; bright petioles; C

### **Collards**

This leafy green seems to be in gardens year-round but is at its best in spring and fall during cool weather. Early spring plantings produce edible leaves right through summer if watered and fertilized, and if insects are controlled.

Some gardeners prefer to harvest the large, mature lower leaves, leaving young leaves and the growing bud to produce more leaves for later harvests. Other gardeners harvest leaves from young plants by cutting them from the plants, leaving the growing buds to produce leaves for later harvests. Collard seeds are sometimes planted in May, June, or July for summer transplants and fall harvest.

Collards are relatively heavy-feeding plants and require side-dressing with a nitrogen fertilizer. The most popular old varieties, Georgia LS (long standing) and Vates, are both relatively slow to go to seed. Vates is the preferred variety for overwintering.

Major insect problems are aphids and leaf-eating worms. Larvae of cabbage loopers and imported cabbage moths are serious pests in late spring, summer, and early fall.

### **Varieties**

Champion – 70; Vates-type with longer standing ability

Flash – 55; very slow to bolt; repeated harvests of dark green, smooth leaves

Georgia LS – 75; spring and summer planting not recommended for over-wintering

Top Bunch – 70; wavy, light savoyed; blue-green leaves regrow quickly after harvest; upright plants and slow to bolt

Vates – 75; standard older variety for overwintering; good resistance to bolting; low-growing, compact

### **Corn, Sweet**

Seed companies have offered an explosion of new sweet corn hybrids in recent years. Sweet corn varieties can be divided into three broad groups: normal sweets, sugary enhanced sweets, and super sweets. Within the sugary enhanced group, there are two types: those with 100 percent of the kernels being sugary and those with about 25 percent of the kernels being sugary. Both the normal sweets and the sugary enhanced are excellent types for gardens because seeds are normal in size and germinate well.

Super sweet seeds are small, and conditions must be ideal for good germination. They are slower to establish than the normal and sugary enhanced types. They have a sugar content that is two to three times higher than that of normal sweet corn and a slow conversion rate of sugar to starch. For these reasons, super sweets hold up well on plants and in the refrigerator.

Both the normal sweet and the sugary enhanced sweet corns have fairly rapid rates of conversion of sugar to starch, but these sweet corns also have a creamy texture, while super sweets are crispier and waterier. In addition to differences in sugar content, sweet corn also comes in different colors: yellow, white, and bicolor (yellow and white kernels on the same ear).

Sweet corns also are divided into varieties that mature early (65–70 days), midseason (70–80 days), and late (80 or more days). Most early varieties are better adapted to the northern states and do not make satisfactory growth or ear size in the South. For an ear of corn to develop properly, corn pollen from the tassel at the top of the plant must fall to the silks of the ear located about halfway up the stalk. Plant several short rows, rather than one or two long rows, for better pollination (and fuller ears). Hot, dry conditions during pollination result in missing kernels, small ears, and poor development of ear tips. A water shortage, signaled by visible wilting (rolling of the leaves), at the time of silk emergence results in reduced yields and quality.

When different varieties of sweet corn planted close together silk and tassel at the same time, cross-pollination can occur by wind-blown pollen. This may result in something as simple as yellow kernels scattered in the ears of white corn; but more important is the reduction in quality when super sweet corns are pollinated by any other type of sweet corn. So isolate the super sweets from other sweet corns by time of planting so that they silk and tassel at different times; or isolate them by a distance greater than the pollen is carried by the wind. If popcorn and field corn

pollinate any type of sweet corn, they will destroy its eating quality.

Soil fertility problems frequently cause low yields in sweet corn. If soils are cold and wet during early planting, deficiencies of nitrogen and phosphorus will occur. Small ears at harvest indicate low fertility, and poorly filled ear tips indicate low nitrogen, phosphorus, or potassium.

Corn earworms are the most serious sweet corn pests, although chinch bugs, flea beetles, blister beetles, and armyworms also cause serious damage. As soon as silks appear, spray or dust to control earworms. Continue to apply insecticide on a 3- to 4-day schedule until silks are brown and dry. Sweet corn is ready to harvest about 20 days after the first silks appear. The ear should feel full, the kernels should be plump, and the juice should be milky in the normal and sugary enhanced types.

Birds are a problem at planting time and at harvest time. They pull seedlings from the soil to feed on the kernels and feed on the ears as they approach maturity. Problems with animals, such as raccoons and squirrels, feeding on sweet corn as it matures are difficult to prevent. You can prevent some damage by using a two-strand electric fence around the garden. Place one wire about 4 inches aboveground and the other at about 12 inches. The electric fence should be in operation well before corn approaches maturity.

### **Normal Type Varieties**

Merit – 80; yellow; tolerant to high temperatures and drought; large, heavy ears; smut-resistant; sometimes called silkless because silks come off ears easily; mid- to late-season

Silver Queen – 92; white; exceptional quality; late; CLB, R, SW

Sweet G-90 – 80; bicolor; very tender and sweet

### **Sugary Enhanced (se) Varieties**

Bodacious – 75; homozygous; yellow, medium-sized ear; excellent eating; CLB, MDMV, R, SW

Incredible – 84; yellow; good husk protection and tip fill; late; CLB, MDMV, R, SW

Snowbelle – 85; white; creamy texture; 1 week earlier than Silver Queen

## **Cucumbers**

Cucumbers are divided into two broad groups, pickling and slicing, based on shape and color.

Pickling types are short and blocky and have white or black spines (they are small and easily overlooked). Fruit is generally dark green at the stem end and may be almost white at the blossom end. Fruit with white spines turn light

yellow or white when overmature. Black-spined types turn orange.

Slicing cucumbers have long fruit, are generally dark green from stem to tip, and have white spines. Grow slicing cucumbers on a trellis for straight, uniformly colored fruit. Fruit types may be used interchangeably (except in vegetable shows), and the two types cross-pollinate.

The normal type of cucumber plant has separate male (short stem and pollen) and female (little cucumber and pollen-receiving organ) flowers on the same plant. This condition is called *monoecious*. Some of the newer hybrids are described as being predominantly female, or *gynoecious*. These plants produce few if any male flowers. Seed packets of gynoecious hybrids generally contain about 15 percent seeds of a pollinator (normal plants with male flowers).

Until recently, all garden cucumbers required pollination for fruit to develop, and the cucumbers had seeds in them. Plant breeders are now developing seedless (*parthenocarpic*) varieties that develop without pollination and seeds.

All cucumbers must be harvested before blossom ends soften or fruits yellow. Smaller fruits are more desirable for pickling than the larger ones, which can be used for relish or mock spiced apple slices. Harvest slicing cucumbers before seed coats on the seeds begin to harden. Remove all overmature, large, and poorly shaped fruit from the vines to keep plants producing.

Poor fruit shape (crooks, nubs, and balls) is caused by low soil fertility, drought, or poor pollination. A cucumber is almost 95 percent water, so lack of water affects fruit development and quality. Bitter cucumbers result from poor growing conditions (low soil fertility, high temperatures, and drought). Varieties are now available that do not become bitter, but this is no excuse for neglecting the plants.

Cucumbers do not cross-pollinate with melons, squash, or pumpkins, but they do cross with other varieties of cucumbers. This has no impact on the fruit being harvested and should be of concern only if you save seeds. Since most modern varieties are hybrids, saving seeds is not recommended.

Cucumber seedlings that are not grown in small pots or containers do not transplant easily, so plant seeds where they are to grow; or start seedlings in peat pots, pellets, or cups, and set them in the garden before the first true leaf enlarges. Most new cucumber hybrids are resistant to major diseases. When possible, grow varieties with resistance to downy mildew. Problem-causing insects are cucumber beetles, squash bugs, and pickleworms.

## Pickling Type Varieties

Carolina – 51; gynoecious hybrid; medium-length vine; medium dark green; blocky fruit; white spine; A, CMV, DM, PM, S

Cool Customer – 55; blocky; exceptional crunch and flavor; white spines; small seed cavity

Max Pack – 55; huge yields; resists bitterness; small seed cavity; A, CMV, PM, PRSV, S, WMV, ZYMV

Slicing Type Varieties

Corinto – 48; early; dark green; uniform 7- to 8-inch fruit; thick skin; small seed cavity; CMV, CVYV, PM

Diva – 58; adaptable; seedless; thick skin; sweet; bitter-free; CVYV, DM, PM, S

General Lee – 52; CMV, DM, PM, S

Straight 8 – 65; white spine; AAS 1938 winner and still productive; CMV

## Eggplant

Eggplant is an extremely cold-sensitive vegetable, and early planting results in stunted plants. Direct seeding in the garden is not recommended. Start with transplants, either home-grown or purchased. Use a starter solution when setting out transplants.

You have a broad choice of varieties when ordering seeds from a catalog, but there is often little or no choice of varieties when purchasing plants. Most plant producers grow only Black Beauty, the old standard, late-maturing variety. New varieties and hybrids offer high yields, earliness, and a choice of size, shape, and color.

Eggplant is in the garden from spring planting until frost, so mulch plants to reduce summer's heat and drought stress. Side-dress when plants are half grown and again after first harvest. Several diseases and insects attack eggplant. The most serious disease is Phomopsis fruit rot. The most serious insect pest is the flea beetle. This small, black insect eats many tiny holes in the leaves and may defoliate and kill plants.

## Varieties

Asian Delite – 60; slender, bright purple fruit; high-yielding; upright; spineless; 8–10 inches long

Black Beauty – 80; heirloom; low-spreading, bushy plant; fruit round to globe; dark purple

Fairy Tale – 50; petite plant; white with violet stripes; AAS 2005 winner

Goya – 55; round to globe shaped; 6- to 8-inch fruit; green; spineless

Millionaire – 55; oriental type; purple-calyxed, black fruit

Nadia – 67; traditional black Italian type; dark purple fruit; 7–8 inches long

## Endive and Escarole

These two strong-flavored leafy greens are commonly used in salads. Both are cool-season vegetables like lettuce and are best grown like head lettuce. Plant transplants in spring and direct seed in fall. Endive has curly, finely cut leaves, while escarole has broad, flat leaves. Both have a somewhat coarse texture and a strong flavor that some interpret as bitter.

## Varieties

Florida Deep Heart – 85; broad, dark green leaves; creamy white heart; escarole type

Green Curled – 95; finely cut, curled leaves; endive type

## Gourds

Gourds are divided into several groups based on use and flower color. The small, hard-shelled, ornamental gourds (used for decoration) have yellow flowers. Varieties within this group belong to the same botanical group as summer squash, and they do cross-pollinate.

The utility gourd varieties have white or yellow flowers. Some can be eaten when young and are also known as running okra. To be safe, read the label before eating any gourds. Fruit can reach 2 feet in length and have prominent ribs, or they can be smooth.

Gourds are grown the same way as muskmelons, cucumbers, squash, and pumpkins. Vines are vigorous and spreading and will readily climb a support or trellis. Trellising results in better-shaped gourds and keeps them off the ground, reducing rotting and soil staining.

Plant seeds about 1 inch deep when the soil is warm and danger of frost is over. Space plants about 2 feet apart when not trellising. Utility and luffa gourds have large, vigorous vines and require a long growing season.

Fertilize the same as squash and watermelons. Side-dress when the vines begin to run. Harvest ornamental gourds in August or September when fruits become hard. Harvest dipper gourds when they turn tan or brown and luffa gourds when the skin is yellow and can be easily removed. Use clippers to avoid twisting or breaking the stems. Handle carefully to avoid cuts and bruises.

Following harvest, wash the ornamental, dipper, and birdhouse gourds in a non-bleaching disinfectant and place them in a dry location with good air circulation until thoroughly dry. Cure dipper and birdhouse gourds for several weeks in a warm, dry place.

Gourds are very hard, and the seeds rattle when completely dry. With luffa gourds, remove the yellow skin and seeds from the fresh gourds. Remaining fibers can be washed and dried in the sun. Luffa gourds dried with the skin on must be soaked in water for several days to soften



the skin to ease its removal. Remove seeds, wash the fiber mass, and dry in the sun. After drying, colorful ornamental gourds can be waxed or dipped in shellac and hung by their stems to dry. Major insect pests of gourds are cucumber beetles, squash bugs, squash vine borers, and pickleworms.

### ***Small Varieties***

Apple – 110; resembles a giant apple; 7.5 inches tall; green speckled with white

Goblins Eggs – 80; fruits shaped like eggs; 2–3 inches long; fruits mature earlier than most gourds

Autumn Wings – 100; has fins or wings; 6–8 inches long; cream, yellow, white, or green

Daisy Gourds Mix – 95; high yield; shades of green, orange, yellow, and white; daisy pattern on stem end of fruit

### ***Large Varieties***

Luffa – 120; up to 12 inches long; used as a sponge

Turk's Turban – 90–120; bottom half usually solid color; top beige with stripes of orange and dark green; versatile in recipes

Birdhouse – 90–120; large, bulbous body and skinny, curving neck; favored for bird houses and crafting; up to 12 inches long

Dinosaur Gourd – 125; green skin with distinctive ridges for reptilian appearance; 18- to 24-inch fruits

## **Horseradish**

Horseradish is a hardy perennial with one main type that is normally grown as an annual. This cool-season root crop is not well-adapted to Mississippi's climate and soils. Start in early spring with root cuttings (sets) that are 8–14 inches long. Plant 18–24 inches apart and 4–5 inches deep in a trench. Water and mulch to keep soil cool. Horseradish does best in deep, loose, fertile soil. Use a fertilizer high in potash to promote good root development. Keep side shoots removed to force development of one large root. This requires digging around the crown to cut off the side shoots. Harvest in the fall after frost. Side roots not removed during growth can be removed at harvest, stored, and used to start another crop.

## **Jerusalem Artichokes (Sunchoke)**

This relative of the sunflower produces fleshy tubers you can boil, fry, or eat raw. In the spring, plant small tubers 2–3 inches deep and 18–24 inches apart. Stalks reach several feet in height and produce masses of attractive yellow flowers before frost in the fall. Tubers can be harvested all winter and are best left in the ground until needed. Keep harvested tubers in a plastic bag in

the refrigerator to prevent shrinkage. Beware, it quickly becomes a weed from small tubers left in the ground at harvest. Only one main type available.

## **Kale**

This close relative of cabbage and collards is best grown in the fall garden. Light frost improves the flavor. In some years, kale plants survive the winter to produce an early spring crop of leaves. Sow seeds directly in the garden in late summer, and thin plants to stand 8–12 inches apart. Harvest the lower leaves or cut the entire plant. Aphids and leaf-eating worms, such as cabbage loopers and imported cabbage moths, are the most serious pests.

Kale is available in two different types: a curly-leafed type that is normally used for eating and an ornamental type used for garnish. Be sure to grow the correct variety for eating.

### ***Varieties***

Black Magic – 65; highly uniform for full-size production; a Toscano kale; long, narrow leaves; attractive, tall, straight bunches; dark blue-green leaves with beautiful savoy  
Lacinato – 55; unique heirloom type; strap-like, blue-green leaves; 10 by 3 inches; deeply savoyed and crinkled; extremely winter hardy

Red Russian – 50; smooth green, purple-veined leaves; for baby leaf and bunching; purple stems with flat leaves and purple veins; plants mature medium to tall; leaves are tender compared to other kales; for salads and light cooking  
Starbor – 55; finely curled, dark blue-green leaves; can be harvested with one cut; compact plants produce uniform leaves that resist yellowing and have good flavor; perfect for harvesting the whole plant at 12–18 inches

Tascano – 60; Italian heirloom or "dinosaur" kale; dark blue-green; non-curved but heavily blistered (savoyed); rich, tender leaves have a softer texture and milder texture than green curly kales; tolerant of hot and cold weather  
Winterbor – 60; standard green curly kale; tall, growing up to 2–3 feet; excellent yield; good cold hardiness; ruffled, blue-green leaves with attractive curl; vigorous plants will continue producing leaves for successive harvests

## **Kohlrabi**

Known as stem turnip, kohlrabi is a rapid-maturing, cool-season vegetable that can be grown in both the spring and fall garden. This vegetable is not widely grown by Southern gardeners, even though the hybrid variety, Grand Duke, was named an All-America Selection in 1979.

Kohlrabi grows very well in Mississippi and is becoming popular as an alternative to chips for snack food. Thinly sliced

raw roots are used with dips. Thin seedlings to stand about 4 inches apart. Keep plants watered and fertilized so they don't become woody. The swollen stem can reach several inches in diameter but should be harvested at 2 inches.

## **Varieties**

Beas – 42; first white kohlrabi; early and uniform; sweet, mild flavor; creamy internal color

Kolibri – 45; deep purple skin; nearly fiberless, crisp white flesh; 3- to 4-inch bulbs

Konan – 45; smooth, globe-shaped bulbs; 6 inches in diameter; AAS 2016 winner; good tolerance to leaf spots, thrips, and cabbage worms

Terek – 40; high-quality; up to 6 inches in diameter

## **Lettuce**

Both leaf and head lettuce grow well in Mississippi gardens in spring and fall. Leaf lettuce is more cold-hardy, faster maturing, and more shade-tolerant. A few varieties are more heat-tolerant than head lettuce.

Start plants in a cold frame in late winter or early spring for transplanting to the garden, or sow seeds directly in the garden. Head lettuce seeds sown directly in the garden in very early spring make a good crop if May is a relatively cool month. Remember, garden head lettuce doesn't have to form a solid head before being harvested and used. Lettuce transplants easily, and plants with plenty of growing space develop more quickly than those in the crowded seed row. Thin leaf lettuce to at least 4 inches apart, butter-head bibb types to 6 inches apart, and crisp head types to 10–12 inches apart.

All lettuces are heavy feeders and need high-nitrogen fertility. Because the root system is small and shallow, keep soil moist to promote rapid, constant growth. Lettuce does not grow well in hot weather without plenty of moisture, and it may become tough and bitter and go to seed.

## **Bibb Type Varieties**

Butter Crunch – 46; using the original stock seed from Cornell University; forms a small, open but tightly bunched, 6-inch, fan-shaped rosette; dark green leaves and small compact hearts that blanch to an appetizing yellow color

Rosaine – 50; dark red Little Gem type for mini heads; a true bibb with exceptional bolt tolerance; uniform, dense heads are layered with crisp, semi-savoy leaves; DM

## **Butterhead Type Varieties**

Adriana – 48; heat-tolerant; dark green; large heads are full and dense with good flavor; good tolerance to tip-burn and bolting; DM

Skyphos – 47; most adaptable; beautiful, large, dark-red heads with nicely contrasting green centers; excellent flavor and texture; the surest heading of red butterheads; DM

## **Leaf Type Varieties**

Green Ice – 50; sweet flavor with crisp leaves; great multi-harvest variety that is slow to bolt

Starfighter – 52; heat-tolerant; green leaf; produces high yields of uniform, medium-size heads with good flavor; dark-green leaves are shiny and slightly savoyed; excellent bolt and tip-burn tolerance; DM

## **Romaine Type Varieties**

Green Forest – 56; most attractive; early, tall, and dark green; slow-bolting; smooth ribs; good for field or greenhouse production in conventional and hydroponic systems

Thurinus – 56; dark red; for full size; great leaf contrast; similar color to Red Cash; uniform plants are well-suited for spring and fall; DM

## **Mustard Greens**

Mustard greens are quick and easy to grow in spring and fall. Mustard does not tolerate heat and bolts when weather warms in late spring. Plant seeds 4–6 weeks before the last frost in spring and 6–8 weeks before the first frost in fall. Several plantings, a couple of weeks apart, provide a continuous supply of mustard. Harvest by cutting entire plants, breaking off only the large leaves, or cutting plants to within an inch or so of the crowns, permitting regrowth for a second harvest. Curly-leaved varieties trap a lot of sand that is difficult to wash off.

## **Varieties**

Florida Broad Leaf – 45; broad, flat leaf; sawtooth edge; the most popular garden variety

Green Wave – 21; very curly leaf; AAS 1957 winner

Southern Giant Curled – 50–70; very curly leaf; AAS 1935 winner

Tendergreen (Mustard Spinach) – 35–40; heirloom; strap-shaped leaf; smooth

Garnet Giant – 45; attractive red leaves that turn green when cooked

Savannah – 35; early-maturing; broadleaf tender green type; large, erect plants with deep green leaves; slow to bolt

## **Okra**

Okra is a hot-weather vegetable. Most varieties make large plants that require a fair amount of garden space. When two rows are planted side by side, leave extra space between the rows and on both sides to allow for

easy harvesting. Okra seeds are hard. Soak them in water overnight before planting to speed germination.

Space the seed about 4 inches apart in the row and thin seedlings to the recommended spacing, or plant groups of two to three seeds at the recommended final spacing and thin seedling groups to one plant. Planting through black plastic mulch is recommended to promote earliness. Okra seedlings are sensitive to cool, wet soils and cool air temperatures. Acid soils result in poor pod development. A second planting of okra seeds about 6 weeks after the first planting ensures plenty of tender pods in late summer and fall when production on the early planting is declining.

Cut back tall okra plants to a height of 3–4 feet to promote branching, to make harvesting easier, and to renew the plants. Side-dress with a nitrogen fertilizer at the same time. Harvest okra pods by snapping or cutting frequently. Even the spineless varieties cause some skin irritation, so wear long sleeves when harvesting. Disease problems are generally minimal, but okra is sensitive to root-knot nematodes. Insect pests are corn earworms, stink bugs, and ants.

## **Varieties**

Annie Oakley II – 52; hybrid; Clemson spineless type; spineless pods are slightly ribbed

Clemson Spineless – 60; leading home-garden variety; straight pods are tapered, ridged, spineless; less foliage than Perkins Spineless; AAS 1939 winner

Jambalaya – 50; early; high-yielding; dark green pods

## **Onions**

Onions are grown for green-topped salad onions and dry bulb onions. Select a loose, fertile soil and start with transplants, small dry bulbs (sets), or seeds. Set out transplants in late winter and early spring, depending on location, and use for both salad and bulb onions. Onion sets planted in early spring also produce salad onions and bulbs. Fall-planted sets produce fall salad onions and, when overwintered, produce spring salad onions and bulbs.

Onion seeds are normally planted in fall (September to October) to produce transplants, but few gardeners go to the trouble of raising their own onion plants. Separate onion sets into two sizes, smaller than a dime and larger than a dime, before planting. The small sets planted in spring make bulb onions; planted in fall, they may survive the winter to make bulb onions. Large sets planted in spring or fall generally flower and should be used for green salad onions because onion plants that flower do not mature into good dry bulbs.

Space sets and transplants for bulb onions 4–6 inches apart in the garden row. Onion plants have shallow roots

and are subject to injury from dry soils. Side-dress with a nitrogen fertilizer once or twice to encourage strong and vigorous growth. As onion bulbs begin to mature, the tops yellow and fall over. Lifting the bulbs gently with a turning fork to break some of the roots hastens maturity. Do not bend over the tops to hasten maturity. This practice reduces bulb size and opens the onions to neck rot. The onion varieties grown for bulbs in the South do not make strong-flavored, hard-storage-type bulbs. The soft, sweet Southern onions keep for several weeks, but plan to use them quickly.

## **Varieties**

Candy – 85; cross between a long-day and a short-day onion; jumbo bulbs; white flesh; golden-brown color outside; PRR

Crystal Wax – 65; white skin and flesh; standard variety; flat, medium-sized, soft bulb; mild flesh; also used for green salad onions

Granex 33 – 125; Vidalia-type onion; hybrid; thick, flat globe shape; yellow skin; fair storage quality; mild, sweet flavor

Granex 429 – 125; yellow skin; deeper shape than Granex 33 and several days later maturing; mild, sweet flavor

Super Star – 100; day-length neutral; can weigh 1 pound or more; AAS 2001; PRR

Texas Grano 1015Y – 115; yellow skin; globe shape; sweet and mild; PRR

## **Southern Peas**

Field pea, cowpea, and protepea all are names used for the southern pea. There are numerous types and varieties, with many old family favorites in the seed trade. Gardeners classify peas several different ways: seed color, pea size and shape, and pod color. Small pea and pod types are referred to as lady peas. Other common types are crowders, creams, blackeyes, pinkeyes, purple hulls, and silver skins.

Do not plant this warm-weather vegetable early in cool soil. Peas grow in all soil types but are sensitive to high levels of nitrogen fertilizer and respond by making all vine and few pods. Older varieties tend to make a vine; newer varieties are semi-vining to bush type.

Seed quality and variety are important to success when growing peas. Varieties such as Mississippi Silver, Mississippi Purple, Magnolia Blackeye, Mississippi Cream, and Mississippi Pinkeye have resistance to multiple diseases and perform better than varieties with no disease resistance, such as California Blackeye, Knuckle Purple Hull, and Bunch Pinkeye. Major disease problems are fusarium wilt, several viruses, root-knot nematodes, and pod rots. The most serious insect problems are cowpea curculios, aphids, and stink bugs.



## Varieties

Louisiana Quickpick – 72; bears pink-eyed, purple-hulled pods above the foliage; CMV

Magnolia Blackeye – 75; light green to cream pea with black eye; mature pods are tan; small plant; pods are not held up well; multiple disease resistance

Mississippi Cream – 70; pods with nearly white seeds in green shell stage; 7 inches long; high yields

Mississippi Purple – 60; large, brown crowder type; green pea is large; mature pod light green to purple turning brown when dry; semi-vining type plant with disease resistance; F

Mississippi Silver – 62; large, brown crowder type; mature pod is green turning silvery and then yellow; large, semi-vining plant; multiple disease resistance

Pinkeye Purple Hull – 75; typical pinkeye type; seeding in garden not recommended

Strike – 55; first to bear; medium size; F

Top Pick – 55; easy to harvest because pods are on top of bush; creamy white pea with pink eye; easy to shell

## Peas, English, Snap, Snow

**English peas** require early-spring planting to mature before warm weather destroys them. Prepare the planting site in fall by adding all recommended fertilizer except nitrogen. Prepare a high bed so that planting is possible when the rest of the garden may be too wet.

Soil temperatures at planting should be at least 45°F for good germination. Plant seeds 1 inch deep and 1 inch apart. Allow 8–10 inches between double rows. Some form of support makes harvesting easier and keeps vines off the ground, reducing losses to pod rot. Tall varieties must be supported. Double rows of short vine types support themselves. Mulch to keep soil around roots cool and moist.

Grow **sugar peas (snow peas)** the same way as English peas. Harvest edible pods while still young and tender, and before peas enlarge.

Edible-podded peas are also grown like English peas. Plants and pods resemble English peas, but the pods and enlarged peas are eaten together without shelling. Sugar Snap, a 1979 AAS Gold Medal winner, has tall vines that require support. More recently developed varieties have short vines.

Some varieties of English peas have smooth seeds and others have wrinkled seeds. Smooth-seeded peas have a starchy flavor, even when young, and are used mostly for canning. Wrinkled-seeded peas are sweet when young and are slower to lose quality.

## English Pea Varieties

Alaska – 52; smooth seed; canning type; early; 28-inch vines

Green Arrow – 70; midseason; wrinkled seed; 24- to 28-inch vine; 4-inch pods; 9–11 peas per pod; DM, PM

Little Marvel – 70; old variety; wrinkled seed; 15-inch vines; early; 3-inch pod; 6–8 peas per pod

## Snap Pea Varieties

Snappy – 63; large pods; 8–9 peas; vines 6 feet; mildew resistant

Sugar Ann – 56; bush-type plant; 18–24 inches tall; F

Sugar Bon – 56; 2- to 3-inch pods; weather-tolerant; powdery mildew-resistant

Sugar Daddy – 74; stringless; easy to pick

Sugar Snap – 70; thick-walled, edible pod; 2- to 3-inch pods; wilt resistant; F, PM

## Snow Pea Varieties

Dwarf Gray Sugar – 60; early; 3-inch, light green pods; vines are 2 feet tall

Mammoth Melting Sugar – 70; 4-inch pods; 4-foot, wilt-resistant vines

## Peanuts

Peanuts are divided into four general categories according to plant and nut types: Virginia, Runner, Spanish, and Valencia. Virginia and Runner types are mostly low-growing plants with two large seeds per pod. These are the best garden types. Spanish and Valencia types are mostly erect plants with small seeds. Spanish have two to three seeds per pod, and Valencia have three to four.

Peanuts grow best on coarse-textured, sandy loam soils. On fine-textured soils, the Virginia and Runner types are difficult to harvest, and many pods may be left in the ground. Peanuts are good users of residual fertilizer in the soil and may not need additional fertilizer. Soils of low fertility require about 10 pounds of 0-24-24 or equivalent per 1,000 square feet. Soils of medium fertility require about 7 pounds per 1,000 square feet. Peanuts are very sensitive to low soil pH and low levels of soil calcium.

Remove seeds that are still in the pods, being careful not to damage the seed coat or split the seed. Use ½ pound of seed per 100 feet of row. Virginia and Runner types require 3 feet between rows, with plants 3–4 inches apart in the row. Plant Spanish types closer together (2 feet in row with 2–3 inches between plants). Plant on a wide, slightly raised bed. Cover seeds with 1–2 inches of coarse-textured soil or 1 inch of fine-textured soil. Inoculate the peanut seed where a well-nodulated peanut or southern pea crop was not grown on the site the preceding year. Buy a fresh

commercial peanut inoculant and apply it to the seed immediately before planting.

To prevent poorly developed pods, sprinkle about 2½ pounds of gypsum or basic slag per 100 feet of garden row over the plants when they begin to flower. Because peanut plants are low-growing, close cultivation is difficult. Keep weeds under control and soil free from crusts that interfere with the pegs (young, undeveloped peanuts) entering the ground. Do not throw or pull soil to the plants while cultivating because this kills leaves, interferes with flowering, and increases the chance for disease. Once pods are developing in the soil, cultivation causes injury, so weeding close to the plants must be done by hand.

Peanuts are relatively tolerant of dry soils when compared to some other garden vegetables. However, they need plenty of water when flowering vigorously and when pegs are entering the soil. A water shortage at this time greatly reduces yields. Water is also important as harvest approaches. Do not water peanuts as they begin to mature. The Virginia and Runner types have good seed dormancy, but Spanish types may sprout if watered. As peanuts mature, leaves turn yellow. Since plants flower over a period of weeks, all pods do not mature at the same time. False maturity (plants yellowing) caused by disease reduces yields.

Days required from planting to maturity is 120–150. Dig when about 75 percent of the inner hulls of Spanish types and 65 percent of the inner hulls of Runner types are brown. Dig the whole plant with a turning fork, being careful to break off as few pods as possible. Freshly dug green peanuts are excellent for boiling. After several days of exposure to good drying conditions, the moisture content of the peanuts drops from 50 percent to about 20 percent. Move plants to a warm, airy place for 2–3 weeks to complete curing before pulling the nuts from the plants.

Yields vary with planting date, soil pH, growing conditions, and type grown. Virginia and Runner types yield about 1 bushel (35–45 pounds green; 15 pounds dry) per 100 feet of row.

Major diseases/pathogens attacking garden peanuts are leaf spot and stem rot (southern blight). Manage these by changing the garden location of peanuts each year. Remove all dead plants and leaves from the garden site (sanitation) or turn them under in the fall to allow time for decomposition. Manage most leaf spot diseases by regularly applying fungicides containing copper or sulfur throughout the growing season. Sanitation is the best way to manage stem and pod rot. Control velvet bean caterpillars, corn earworms, fall armyworms, and thrips with carbaryl (Sevin). Control aphids with malathion. Always check the label for the pest and crop before treating.

## ***Varieties***

Florida Fancy – 135; medium-maturing VA type; large-seeded; TSWV

Georgia 11J – 150; late-maturing VA type; large-seeded; TSWV

Wynne – 140; possibly best for home gardens; improved VA type, large-seeded

## **Peppers**

Garden peppers, both hot and sweet, are generally purchased as transplants from a local distributor at planting time. Peppers grow well on black plastic mulch. Use a starter solution when setting plants in the garden. Growing transplants from seeds takes 10–12 weeks. Direct seeding in the garden is not recommended.

All peppers are sensitive to excessive nitrogen fertilization. Too much fertilization will cause blossoms and small pods to drop off. Hot daytime temperatures and cool nighttime temperatures also cause blossom drop. Problems with peppers other than blossom drop are blossom end rot (resulting from drought and acid soils), southern stem blight, sunburn, leaf diseases, anthracnose, viruses, and aphids.

## ***Sweet Varieties***

Camelot – 75; turn from glossy green to red when mature; excellent choice for home gardeners and market growers; BLS, TMV

Gypsy – 60; consistently high yields and extra-sweet taste; TMV

Jupiter – 70; early, large, and blocky; mostly four-lobed; medium green turning red at maturity; TMV

Keystone Resistant Giant – 75; large pendant; blocky fruit; TMV

King Arthur – 79; widely adapted; green or red fruit; BLS, PVY, TMV

Red Knight – 77; open, compact plant; big, blocky fruit; early; BLS, PVY

Sweet Banana – 72; Sweet Hungarian type; 6 inches long; tapered; light yellow turning red

## ***Hot Varieties***

Cayenne – 85; dark green turning red; 6 inches long; processing type for drying and sauce; concentrated fruiting habit; strong, 24-inch plants

Chilly Chili – 90; high yields; 2 inches long; beautiful ornamental plant

Habanero – 90; Caribbean favorite; golden-orange, lantern-shaped fruit; be careful

Hungarian Wax – 58; canary yellow fruit; 6–8 inches long; turns red when ripe

Jalapeno – 70; very hot; thick-walled; tapered green fruit turning red; 3 inches long

Super Chili – 75; hybrid; thin-walled; tapered fruit; 2.5 inches long; fruit held upright on small plants

TAM Mild Jalapeno – 85; mildly hot jalapeño type; dark green; thick wall; productive plant

## Potatoes, Irish

Most garden Irish potatoes are grown in the spring, since good seed potatoes are difficult to find for fall planting. This is one of the few vegetables recommended for growing in mildly acid soil. A soil pH below 6.0 is acceptable because it retards development of potato scab disease.

Prepare garden rows in fall by building a high bed that will permit early spring planting. Small whole potatoes or cut pieces of large potatoes are referred to as seeds. Use certified seed potatoes that are not shriveled or black on the inside when cut. Do not use potatoes left over from last year's garden because they may be diseased and result in low yields. Do not use potatoes from the grocery store; these may not be adapted to our area and they may have been treated to prevent sprouting.

Cut seed potatoes into pieces weighing 1–2 ounces with at least one eye per piece. Small seed pieces produce weak plants; large pieces are a waste of seeds. Cut seed potatoes several days before planting and hold them at room temperature spread in a single layer to allow the cut surfaces to dry and heal. This reduces seed piece rot following planting. Use 1 pound of seed potatoes to plant about 10 feet of row; 10 pounds should plant 100 feet of row. Space seed pieces 10–12 inches apart and cover with 3–4 inches of soil.

Spring-planted potatoes normally bloom, and some of the flowers develop into fruit that look like small, green tomatoes. These fruits, the green areas on the skin of potatoes that have been exposed to light, and sprouted potato eyes contain a poisonous substance that may cause illness if eaten. Prevent greening of potatoes by keeping them covered with soil as they grow and keeping them in the dark after harvest.

Some gardeners prefer to grow potatoes in straw mulch. Potatoes grown in such a manner are clean and easy to harvest. Cover seed pieces with 1 inch of soil. When green sprouts appear, place 4–5 inches of straw around the plants. Keep the layer of straw deep and moist. When potato vines die, harvest potatoes by carefully removing the straw. Problems with Irish potatoes are seed piece rot resulting from planting in clay, wet soils; enlarged lenticels (warts) and tuber rot from excessive soil moisture near harvest; early blight; Colorado potato beetles; and aphids. Most

varieties have white flesh and light brown or red skin. Some specialty varieties have yellow or dark flesh.

## Varieties

Kennebec – 90; large oval; blight tolerance; light tan skin with white flesh; PVY

LaChipper – 110; light brown

Norland – early; red; oblong-shaped; shallow eyes

Norchip – 85; early; light brown; round to oblong; shallow eyes

Red Gold – 70; medium sized (2–3 inches); round tubers; PVY

Red LaSoda – 100; midseason; red; oblong-shaped; deep eyes

Red Pontiac – 100; midseason; red; oblong-shaped; deep eyes

Superior – 105; midseason; light brown; moderate resistance to common scab; PVY

## Potatoes, Sweet

This tropical root crop is started from small plants called slips or vine cuttings. Slips are produced by sprouting sweetpotato roots in moist sand or sawdust. Cover roots in a box or bed with 3–4 inches of sand or sawdust; water and keep warm (80°F). In a few weeks when sprouts are several inches long, pull them from the roots. Additional slips develop and can be used for later planting. Before planting sweet potato slips (homegrown or purchased), cut about 1 inch from the base of the stem to reduce disease problems. Use starter solution when setting slips in the garden. Vine cuttings are slips cut at the bed surface with no roots or cuttings taken from the ends of slips set in the garden earlier. They have the advantage over slips of further reducing disease and insect problems. Vine cuttings several inches long can be made until July 1. These cuttings root rapidly when set in warm, moist soil.

Sweetpotatoes need warm soils and about 90–110 days from setting the plants until harvest. Even good roots will produce poor yields if the soil is clay, wet, or overfertilized with nitrogen. A good sweet potato fertilizer has a ratio of 1-2-4. Select a loose, well-drained soil that allows for root growth and easy digging. Side-dress 3–4 weeks after transplanting with a low-nitrogen, high-potash fertilizer. Many sweetpotato varieties flower in late summer.

Dig sweetpotatoes when the soil is fairly dry and the air is warm. Early harvest results in many small roots. Late harvest results in jumbo roots and possible cold injury. Do not let freshly dug potatoes sit in the sun because they scald easily. If exposed to temperatures below 50°F, potatoes may develop hard spots, a condition known as hardcore, or be chilled and begin to break down.



Problems with this crop are sweetpotato weevils in the southern half of the state, and the diseases scurf (soil stain) and soil rot. Clip the base of the slips before planting or use vine cuttings to reduce scurf. Acid soils may help to reduce soil rot. Cracks in the roots indicate root-knot nematodes or periods of rapid growth stimulated by abundant water following dry weather.

### **Varieties**

Beauregard – 90; dark red-orange skin; moist, sweet, orange flesh; early; widely adapted; produces a high percentage of marketable roots

Covington – 90; copper and rose-colored skin; sweet, smooth, bright orange flesh; produces concentrated yields for easier harvest; found to produce a high proportion of ideal-sized roots for market

## **Pumpkins**

Most garden pumpkins are planted for Halloween. Pumpkins planted in spring, when summer squash, cucumbers, and melons are planted, mature in midsummer, long before Halloween. If left in the garden, they rot. Therefore, they must be harvested and used or stored in a cool, dry place. Pumpkins for Halloween are best planted in late June and early July.

Most pumpkin varieties produce strong, running vines that require plenty of garden space. Some varieties are described as having short vines and are adapted to limited space. Pumpkins cross-pollinate with summer squash, acorn squash, vegetable spaghetti, and small ornamental gourds if they are growing nearby. This is only a concern if you plan to save seed for another year.

Jumbo pumpkins belong to a different squash group from Halloween pumpkins, and they cross-pollinate with many types of winter squash. The tan pumpkins Kentucky Field and Dickinson Field belong to a third group and cross-pollinate with butternut squash. All of this crossing results in some strange-looking volunteer squash- pumpkins in the garden or compost pile the next year.

Pumpkin seeds saved from harvest make a nice snack food when roasted. Some varieties have seeds with no hulls. Never eat seeds that were purchased for planting because of insecticides/fungicides used as seed treatments. Problems in growing pumpkins are cucumber beetles, squash bugs, pickleworms, squash vine borers, downy mildew, and powdery mildew.

### **Varieties**

Autumn Gold – 90; hybrid; early; fruit begin turning gold at immature stage; 7–10 pounds; AAS 1987

Big Max – 120; large enough for contests; flavorful; bright orange flesh; 50–100 pounds

Champion – 95; early; upright shape; well-ribbed; thick, medium handle; 30–40 pounds

Corvette – 110; semi-bush; sets abundant crop of bright orange-gold; 10–12 pounds

Early Giant – 95; early; elongated and blocky; uniform; light ribbed; stocky handle; 25–40 pounds

Giant Magic – 90; round fruit; smooth skin; strong handle; 22 pounds

Jack Be Little – 95; miniature; 3 inches across by 2 inches high; not edible; lasts several months

Jack O'Lantern – 100; medium orange; smooth, shallow ribs; 10 pounds

Little Goblin – 85; a true mini; less than 1 pound

Mustang – 100; very productive; thick flesh; bright orange color; 15–18 pounds; PM

Oktoberfest – 95; medium orange; thick flesh; smooth skin; 15–20 pounds

Spookie – 85; small; dark orange; thick; fine-textured; sweet flesh; 6 pounds

Triple Treat – 110; round; thick flesh; seed with no hulls; 6–8 pounds

## **Radishes**

Radishes are quick-maturing cool-season vegetables for spring and fall gardens. They are ready to harvest within 4 weeks of planting and rapidly pass into a pithy, unusable condition. Radishes that produce only tops result from being planted too thick (late thinning), too much shade, or hot temperatures. Black spots in radishes may indicate boron deficiency. Dissolve 1 level tablespoon of household borax in 3 gallons of water and apply to 100 feet of garden row.

Some large-root types designated as winter radishes are recommended for the fall garden. They remain crisp longer than small types, are more pungent, and are best grown like fall turnips.

### **Varieties**

Pearl – 28; pure white; strong tops; crunchy and moderately spicy

Rover – 21; matures early; reliable; uniform; dark red with crisp white flesh

Scarlet Globe – 24; bright scarlet globe; crisp; white; mild flesh

Snowbelle – 30; hybrid; white; round root; crisp; mild

## **Rhubarb**

This cool-season perennial vegetable is not adapted to Mississippi's hot summers, wet winters, and clay soils. It

may survive but will not thrive. Rhubarb grows best where summer temperatures do not exceed 75 degrees. Plants are subject to attack by several fungi, resulting in crown rot. If you do try to grow rhubarb, select a well-drained soil in a lightly shaded area. Raised beds provide additional drainage, which may help reduce disease problems. Set the large, fleshy crown in early spring with the bud 1 inch below the soil surface. Each plant needs 4–6 square feet of growing space.

Normally, harvest should not begin until the second or third year to allow establishment, but the plants might not live that long in Mississippi. Harvest by pulling the large outer stalks and leaving the small inner stalks to enlarge. Do not eat the leaf blade because it is poisonous. Following harvest, apply a small amount of nitrogen fertilizer around each plant. Mulch plants in late fall and again in early spring. Before growth starts in spring, apply a small amount of mixed fertilizer, such as 13-13-13, around each plant. If plants develop a flower stalk in summer, remove immediately.

### **Varieties**

Victoria – perennial; easy to grow (Zones 4–8); lives for 10–15 years or longer; large, tender, rosy-red stalks

## **Spinach, New Zealand and Malabar**

Fresh spinach is a popular salad vegetable. As a cool-weather green, spinach is adapted to growing in spring, fall, and winter gardens. Spinach grows best on a well-drained soil rich in organic matter with a pH approaching 7.0. It grows poorly on soils with a pH below 6.0. Spinach plants are shallow-rooted and require adequate soil moisture. Plant spinach seeds 4–6 weeks before the last frost in spring and 6–8 weeks before the first frost in fall. Soak seeds in water overnight to soften seed coats and hasten germination. With ideal growing conditions, spinach is ready to harvest in 45–50 days from planting. Harvest entire plants or individual large outer leaves, or clip plants, leaving about an inch for regrowth.

New Zealand spinach is a hot-weather leafy green. It is not a true spinach, but the tender, young shoot tips are used in similar ways. It grows rapidly, has many branches, and prefers a well-drained, loamy soil that is rich in organic matter. Being a hot-weather plant, the seeds of New Zealand spinach should not be planted until the soil is warm. Soak seed in water overnight before planting to aid germination. Space plants 12–18 inches apart in the garden row. Side-dress plants with a little nitrogen fertilizer every 4–6 weeks.

Malabar spinach is a tropical, vining plant that does best in hot, humid weather. Easily grown from seed, the plant

makes an attractive vine that should be trellised to keep it off the ground. There are two leaf types, red and green. Individual leaves or the tender, young shoot tips can be used as a hot-weather spinach substitute.

### **Varieties**

Acadia – 45; dark green; semi-savoy; medium-sized leaf; slow-growing, resistant to bolting; DM

Olympia – 45; slow-growing; extremely slow to bolt; smooth, large, dark green leaves; DM

Chesapeake – 45; hybrid; semi-savoy; bolts rapidly; large, upright plant; overwinters; best for fall planting

Dixie Market – 42; compact, upright plant; savoyed; recommended for fall, winter, and spring planting

Melody – 42; hybrid; semi-savoy; upright plant; best for early spring and fall planting; AAS 1977; DM, CMV

Skookum – 35; hybrid; early; dark green; semi-savoy; upright; DM

Whale – 37; oval, dark green, smooth leaves; DM

## **Squash, Summer**

All summer squashes (straight neck, crookneck, bush scallop, and zucchini) are true pumpkins. They cross-pollinate with each other as well as with Halloween-type pumpkins, spaghetti squash, and small, ornamental gourds. All this crossing does not affect the quality of the current season's produce.

Summer squashes have a tender skin and are harvested at an immature stage, generally within 4–6 days after bloom. The plants are bush type rather than vining and are suited for small gardens. Most new varieties are hybrids.

Summer squashes have separate male and female flowers (small squash behind the yellow blossom) on the same plant and depend on bees for pollination. Hybrids may produce a few female flowers before male flowers appear; without pollination, these fail to develop into squash.

Plant summer squash seeds in hills about 3 feet apart, with three to four seeds per hill, or in a row with single seeds spaced about 1 foot apart. Space single plants about 3 feet apart. Crowding leads to low production and disease. Squash do well on black plastic mulch in spring, especially when planted early. They benefit from warm soil and lack of weed competition. Fall squash can be grown by planting seeds in August, but mosaic virus can be a serious problem.

Side-dress plants with a nitrogen fertilizer when they have several leaves but before they start to bloom. Proper harvesting is important for continuous production. Remove all large and overmature squash. Several serious insect pests attack squash plants: spotted and striped cucumber beetles, squash bugs, stem borers, and pickleworms. A regular insecticide spray program helps reduce damage

from these insects. Downy mildew and mosaic virus occur mainly on crowded plants.

## **Varieties**

Cougar – 50; straight neck; high yields; quality fruit; medium bulbs; yellow peduncles; early yielder with extended harvest; CMV, PRSV, WMV, ZYMV

Dunja – 47; straight neck zucchini; early; high-yielder; dark green; easy to harvest; PM, PRSV, WMV, ZYMV

Early Summer – 53; crookneck; bulbous blossom end; bumpy skin; curved neck; harvested young, the fruit holds well

Gentry – 43; crookneck; industry standard; consistently produces outstanding yields; smooth-skinned fruit; small blossom-end scars; fewer spines reduce damage during harvest

Gold Star – 50; crookneck; yellow; broadly adaptable; very uniform; high-yielding; reduced spines make for fewer blemishes; harvest at 4–6 inches; CMV, PM

Grand Prize – 42; straight neck; produces high-quality fruit; glossy, deep yellow; green peduncle; PM, WMV, ZYMV

Noche – 48; straight neck zucchini; dark green, cylindrical fruit; easy to harvest; WMV, ZYMV

## **Squash, Winter**

Hard-shelled squash is grown for harvest in fall and storage through the early winter months. Acorn and butternut are the most popular types, but the group includes many others, such as buttercup, spaghetti, hubbard, banana, marrow, and turban. Some pumpkins, such as cushaw and Kentucky Field, are treated as winter or storage squash. An odd assortment of local squash called "aboveground sweetpotatoes" fall into this group.

Most of these have strong vining plants. The fruit range in size from the small acorn and hybrid early butternut to the large banana and hubbards. Winter squash planted in spring along with summer squash mature in midsummer. These lack the eating quality of those produced on plants from seeds planted in late June or early July along with Halloween pumpkins. Delay harvest until the fruit rind is very hard and vines begin to die. Immature fruits of most varieties are tasteless. Yellow acorn varieties are edible at all stages of maturity. All winter squash is pollinated by bees and requires 60–70 days from pollination to maturity.

## **Varieties**

Honey Bear – 85; single-serve fruit; 1 pound; small plant; PM  
Table Ace – 76; acorn type; nearly black; smooth; sweet, nutty-flavored flesh; 2.5 pounds

Table Queen – 85; acorn type; small fruit; dark green; deeply ridged; smooth and hard; yellow flesh; bush type plant.

Tivoli Spaghetti – 98; large; creamy flesh; compact bushes; 4–5 pounds

Waltham Butternut – 105; large, tan fruit; uniform shape; orange flesh; stores well; vigorous vine, 3 pounds

## **Tomatoes**

Tomatoes are the most popular garden vegetable. They come in many shapes, sizes, and colors, but the most popular is the medium-sized (6–8 ounces) red globe. Tomato plants require full sun, moderate amounts of fertilizer, staking or caging, and insect and disease management.

Determinate (D; short, self-topping) varieties like Celebrity, Mountain Pride, and Mountain Spring are gaining popularity, but indeterminate (I; continuous growth) varieties like Better Boy are used more widely. Most tomatoes are set out as transplants because it takes several weeks longer to harvest from tomatoes planted as seeds. Do not set out transplants too early in the spring. Cool soils as well as cool air temperatures chill plants, resulting in delayed harvest. If transplants have small fruit at planting time, remove fruit to prevent stunting.

Plants set out in spring are sometimes maintained through the summer in hopes of a fall crop. With mulching, irrigation, fertilization, and a good pest-management program, this is possible. However, the fall fruit that develop will be small if you don't maintain a season-long pruning program. A second planting of tomatoes for a fall crop provides large, attractive fruit. Start seedlings in June and set plants out in July or early August. You can use rooted cuttings (suckers) that were removed in pruning to start a second planting. Set tomato transplants deeper than they were growing in the plant bed, peat cup, or plastic tray; the deeper the better.

All garden tomato plants, indeterminate and determinate, must be supported off the ground in some manner to prevent loss of fruit to rots and sunburn. Wooden stakes, placed at planting time or shortly after, are the most common type of support. Staked plants in a row do not have to be tied directly to the stakes. They can be supported by nylon cord that runs from stake to stake, down the row on both sides of the stakes, and at several levels (Florida weave).

Wire cages at least 18 inches in diameter made from concrete-reinforcing wire are also popular. Cages wrapped with clear plastic to a height of 18 inches provide some protection from cold winds and wind-blown sand. Black plastic mulch laid before planting, in combination with plastic-wrapped cages, is beneficial to early plants.

Tomato plants form many branches (suckers) as they grow. It is a common practice to break the suckers out of

the plants to encourage larger and earlier fruit and to make the plant easier to tie and spray. Determinate types are not pruned as heavily as indeterminate types; with either type, don't remove all of the suckers.

Spray products advertised to promote fruit development are useful at times but should not be counted on for all the fruit set. When conditions are not ideal (shade; cool, wet weather; high temperatures) for natural pollination, these sprays are useful. Fruit that develop entirely from these sprays, with no natural pollination, do not have seeds and are not the best quality.

Tomatoes are attacked by a number of diseases and insects. The most common diseases are bacterial wilt, bacterial spot, buckeye rot, early blight, and southern blight. Unfortunately, resistance is limited or not available for many of these diseases. Many varieties do, however, have resistance to Fusarium wilt, root-knot nematodes, and Verticillium wilt. Regular use of fungicides containing chlorothalonil, copper, and mancozeb can help successfully manage early blight and several other leaf and fruit diseases caused by bacteria and fungi.

Major insect problems are aphids, thrips, stink bugs, blister beetles, fruit worms, horn worms, leaf miners, and white flies. Common physiological disorders include blossom end rot (low soil calcium, lack of water), fruit cracking (excess water and high temperatures), sudden wilting (root damage from cultivation or drowning), blossom drop (low or high temperatures, poor nutrition), and sunscald (excessive pruning, no plant support, or loss of leaves to disease). See MSU Extension Publications 3175 *Common Diseases of Tomatoes* and 2975 *Tomato Troubles: Common Problems with Tomatoes* for assistance in identifying common diseases and disorders in tomatoes.

## Field Varieties

I = Intermediate; D = Determinate

Amelia – D; 75; large-fruited; similar to Better Boy with resistance; F, GLS, N, TSWV, V

Big Beef – I; 70; large-fruited; beefsteak; good disease resistance; AS, F, GLS, N, TMV, ToMV, V

Celebrity – D; 72; hybrid; 7- to 8-ounce red globe; firm; flavorful; AS, F, GLS, N, TMV, ToMV, V

Mt. Fresh Plus – D; 78; beefsteak; smooth, firm fruit; uniform shape; bush or stake; F, N, V

Mt. Gem – D; 74; beefsteak; vigorous; high-yielding; great color; F, LB, ToMV, TSWV, V

Park's Whopper – I; 70; hybrid; large fruit; F, N, TMV, V

Primo Red – D; 68; beefsteak; early; great color; high feeder; F, ToMV, TMV, TSWV, V

Red Deuce – D; 72; beefsteak; high-yielding; good quality; AS, F, GLS, TMV, TSWV, V

Sweet 100 – I; 65; hybrid; large clusters of 1-inch, round, red fruit

## Greenhouse Varieties

Bigdena – I; 77; produces very high yields; uniform fruits; 8–12 ounces; mostly smooth with slight shoulder ribs; F, FOR, LM, TMV, V

Geronimo – I; 78; high yields; firm fruits; 8–10 ounces; F, LM, TMV, V

Trust (if available) – I; 78; high yields; 8–10 ounces; very sweet and firm; F, FOR, TMV, V

## Turnips and Rutabagas

Turnips are grown for both leaves (greens) and roots in spring and fall gardens. For greens varieties, it is not necessary to thin seedlings. For roots, thin seedlings to 2–4 inches apart.

Rutabagas are a fall crop with planting recommended in August or early September. Roots require 4–6 weeks longer to mature than turnip roots. Thin rutabaga seedlings to at least 6 inches apart (12 inches preferred) in the row. Rutabaga leaves can be eaten.

Hot weather causes turnips to be strong-flavored or bitter and pithy. Black spots inside the roots indicate a need for boron. Dissolve 1 level tablespoon of household borax in 3 gallons of water and apply to 100 feet of row. Use less for shorter rows. Major problems are aphids, leaf-eating worms, and leaf spots.

## Varieties

Just Right – 65; hybrid; root and top type; white root; broad, serrated leaf

Purple Top – 55; old standard; root and top type; white globe root; purple crown

Seven Top – 45; leaf type; cut leaf; dark green

Shogoin – 30; classic Japanese turnip; used for roots and tops; quick grower

Tokyo Cross – 35; hybrid; root and top type; semi-globe; white root; early

White Lady – 35; uniform; vigorous; quick-maturing; white

## Watermelons

Most watermelon plants require a lot of space and quickly take over a small garden. Some varieties are described as having short vines. Those described as having bush-type plants may be disappointing. Varieties are available that produce large or small, round or oblong, solid or striped fruit with red or yellow flesh, with seeds or seedless.



Plant when the soil is warm and all danger of frost has passed. Watermelon transplants in peat cups or plastic trays can be used, but they must be small (not yet vining) to avoid plant injury. Use transplants for seedless melons because the seed is small, expensive, and slow to germinate. For seedless melon transplants, plant the seeds with the pointed end up.

Hot kaps, black plastic mulch, floating row covers, and plastic tunnels are ways to encourage an early crop. Black plastic also controls weeds. You can use transplants or seeds in combination with black plastic mulch. For normal vining melons, plant several seeds in groups spaced about 6 feet apart. Thin seedlings to two plants in each group. For seedless melons, you must plant some standard melons close by to provide pollination. All watermelons are pollinated by bees and require about 45 days from pollination to maturity. Common disease problems are anthracnose and gummy stem blight. Insect problems are striped and spotted cucumber beetles.

### ***Seeded Varieties***

Crimson Sweet – 85; bright red flesh; good texture; high sugar content; good yielder and shipper; 23–30 pounds

Jubilee – 95; large; light green with very distinct dark green stripes; very tough rind that is nearly an inch thick; crisp, bright-red flesh with a fine texture; very sweet flavor; a Southern favorite; 25–40 pounds; A, F

Mini Love – 70; personal-sized; early; sweet, firm, oval-round fruits; distinctive, bright green rind with dark green stripes; dense, bright red flesh; very productive; compared to Little Baby Flower, Mini Love has fewer and smaller seeds, brighter flesh, thicker rind, and better field-holding ability; 5–7 pounds

Sorbet Swirl – 77; finest multi-colored watermelon we have seen; flesh has beautiful pastel swirls of red and yellow; round to oval fruits; 8 inches in diameter; relatively early; performs well in both cool and warm years; first-rate sweetness and texture; 10 pounds; F, A

Sugar Baby – 76; standard of small watermelons; round fruits; 6–8 inches in diameter; ripe melons are almost black; good flavor; tough rinds resist cracking; the standard of "icebox" melons for many years; 8–10 pounds

Sureness – 75; superior yellow flesh; sweet and crisp "icebox" melon; more adapted and produces a more flavorful, harvestable yield under adverse conditions than Sunshine; attractive, dark green skin with narrow, dark green stripes; sweet, bright yellow flesh; thin rind; yields mostly oval watermelons, with some rounds; 8–10 pounds

### ***Seedless Varieties***

Orange Crisp – 87; orange; great flavor; round, light green fruits with dark green stripes; 11 inches; crisp flesh; good resistance to hollow heart; 17–19 pounds

Secretariat – 80; early-maturing; very high-yielding; smooth, medium-green exterior with green stripes; round-oval shape; tiny pips; firm, crisp, deep-red flesh

Sorbet – 80; delicious; small (great size for farmers markets and CSAs); firm, crisp, bright-red flesh; excellent flavor and sweetness; dark green with dark green stripes; almost round; average 9 inches; 6–8 pounds





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