Growing Pumpkins for the Home Garden

Pumpkins are a warm-season vining crop. They come in a variety of sizes, shapes, colors, and textures. They belong to the gourd family, Cucurbitaceae, along with watermelons, summer squash, and zucchini. They are in the genus *Curcurbita* and are usually referred to as "**cucurbits**." They actually come from a variety of species, including *C. maxima*, *C. mochata*, *C. pepo*, and *C. argysoperma.* They are a good source of vitamin A and fiber but are mostly desired for their decorative value.

Climate/Soils

Pumpkins thrive in warm weather and are very frost-sensitive. Plant after the danger of frost has passed and the soil has begun to warm. Seeds need a soil temperature of at least 70°F to germinate. In Mississippi, this can begin as early as April. Plantings can also be made during summer as long as they can mature before the first fall frost. For Halloween pumpkins, it may be best to plant seed in early to mid-July, depending on the variety.

Planting

For more uniform production, start seeds in a container or tray, and allow them to grow until they have three "true" leaves. Then, thin to one healthy seedling and plant one seedling per hill. You may also sow the seed directly into the warm garden soil and thin at a later date.

Pumpkins need a sunny location with well-drained soil. They will start to die after just 48 hours in waterlogged soils. Incorporating organic matter in the soil and building high rows will help with drainage. This can be done with leaf mold or other composted materials. Best yields are on sandy soils with a pH between 6.0 and 6.8.

Seeds need to be planted 1–1.5 inch deep at a rate of two to three seeds per hill. Space hills 2–5 feet apart within the row with 4–8 feet between the rows, depending on the variety selected. This will take about 0.5 ounce of seed per 100 feet of row. Thin to select the best seedling after they emerge and have grown for 2 weeks. Vines may also be trained down the rows by moving the vines in the direction of the row so the middles are kept open and can be cultivated for a longer period.

To produce larger pumpkins for fun or for local county fairs, plant seeds approximately 120 days before the show date. Vines will need plenty of space to grow. Prune off the first few female flowers, then let only a few set to baseball size. Finally, choose the best one or two and remove all others. Remember to turn the developing pumpkins once per week to obtain a well-shaped product.

Fertilizing

A soil test will allow you to follow exact fertilizer recommendations. If you do not get a soil test, apply 4–6 pounds of a complete fertilizer like 8-8-8 or 8-24-24 per 100 feet of row 2 weeks before planting. While pumpkins respond to an additional side-dressing of nitrogen when the vines begin to run, be careful not to overfertilize. Keep fertilizer off the leaves because it may burn them. Overfertilizing results in excessive vegetative growth, which can lead to delayed yields and a greater risk for fruit rot and foliar disease.

Many gardeners prefer to apply half of the nitrogen (N) and all of the phosphorus (P) and potassium (K) at planting, and then apply the remainder of the nitrogen at "vine run." If potassium is low, fertilize with potassium nitrate, especially in sandy soils.

Maintenance

Black plastic mulch is beneficial for weed control with many vegetable crops. It conserves moisture and fertilizer, helps control weeds, accelerates plant growth, and reduces fruit rots. It will need to be placed over the rows before planting occurs. Grass clippings, bark products, pine straw, hay, and other products may also be used. Be sure hay or straw has not come from a source that has been treated with herbicides.

Irrigation

Sufficient watering is important to get adequate pumpkin growth and quality yields. If the leaves begin to wilt, blossoms will drop rather than set fruit. With irrigation, a thorough soaking is always much better than a light sprinkling. Dam up the ends of the rows to flood the middles or use a form of drip/trickle irrigation. Drip uses less water, reduces disease, and only applies it where water is needed (at the roots). Place drip tape 3–4 inches from the center of the bed and 2–3 inches deep, or simply place a soaker hose on top of the soil. If using plastic as a mulch, the soaker or drip hose should be beneath the plastic. One inch of water per week is needed early, and up to 2 inches may be needed during the 30 days before harvest.

Pollination

Pumpkins are monecious, which means they produce male and female flowers separately on the same plant. Pollen must be transferred from the male flower to the female flower to obtain proper fruit set (**Figure 1**). Pollen is transferred primarily by bees. If pesticides are used, it is best to apply them late in the afternoon when bee activity is usually lower. Poor weather, such as rain, high winds, and high humidity, can affect the bees' ability to pollinate.

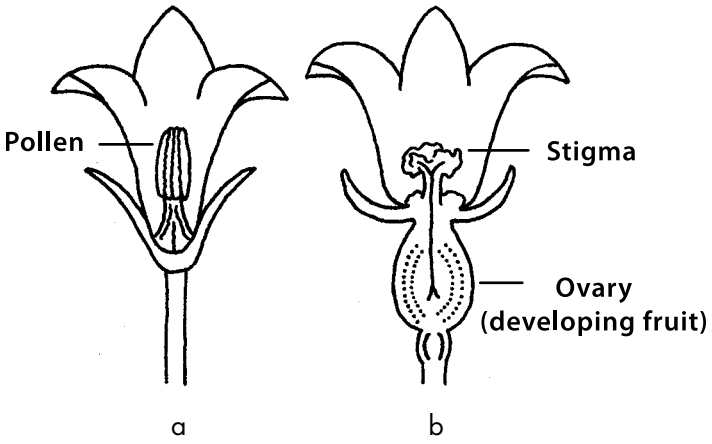

Figure 1. Male (a) and female (b) flowers.

Harvesting

Pumpkins are harvested when fully mature. The skin will have darkened and developed to the proper color for that variety and will have become tough and hard to puncture with the thumbnail. They will keep well for several months with proper storage conditions—temperatures between 50 and 55°F and moderate humidity (50–75 percent). Harvest them by cutting the mature fruit off the vine, leaving about 2–4 inches of stem on the fruit. This helps to prolong storage life. Wiping the pumpkin down with an antibacterial or bleach solution may also help to prevent any disease problems.

Managing Pests

Weeds are a problem with growing any crop. Preemergence herbicides kill germinating weed seeds and work well to control annual weeds. These are applied immediately after planting to a clean plant bed. Sethoxydim

for grasses, halosulfuron for nutsedge, or shielded sprays of glyphosate can be used as a post-emergent on actively growing weeds. Light cultivation between rows will also help to control weeds.

Squash vine borers, squash bugs, cucumber beetles, and spider mites are the most common insects that affect pumpkins. The best control is a regular, scheduled spray program in conjunction with an IPM (integrated pest management) approach. This means scouting regularly, knowing pest threshold limits, and spraying only when necessary with labeled insecticides. Permethrin and bifenthrin are the most effective insecticides, followed by spinosad, malathion, and carbaryl. Natural products like oils, soaps, and pyrethrins are labeled, but these are not as effective.

The most common diseases affecting pumpkins are powdery mildew and downy mildew. Downy mildew attacks when temperatures drop into the 50s and moisture is present for 6 to 12 hours (usually in the form of dew). On the other hand, powdery mildew does not require moisture to establish. Use chlorothalonil, mancozeb, or copper sulfate for these diseases, being sure to get complete leaf coverage. Again, the most effective control will result from selecting resistant varieties and using a good IPM program.

Several viruses affect pumpkins, and their symptoms vary with the different strains. In general, the leaves and fruit take on a green/yellow mottling and usually become distorted. Insects, mostly aphids and thrips, spread the virus, so eliminating insect vectors is key. Growing varieties that have virus resistance is the best control method.

Read all labels before applying any pesticides. Using these materials properly is beneficial to the crop, the environment, and the applicator. Proper timing, application, and amounts used are essential for their safe use. The **label is the law**; follow it.

For control of insect, disease, and weed problems, refer to the following MSU Extension publications. You can find them at your local MSU Extension Service office or online at ***http://extension.msstate.edu/***.

P1091 Garden Tabloid
http://extension.msstate.edu/publications/publications/garden-tabloid

P1532 Weed Control Guidelines for Mississippi
http://extension.msstate.edu/publications/weed-control-guidelines-for-mississippi

P2347 Insect Pests of the Home Vegetable Garden
http://extension.msstate.edu/publications/insect-pests-the-home-vegetable-garden

P2036 Organic Vegetable IPM Guide
http://extension.msstate.edu/publications/publications/organic-vegetable-ipm-guide

Varieties

Most varieties are bred to look good, but some newer ones are bred for rind thickness, stem strength, and durability. With all the variability, it is important to select varieties suited for growing in Mississippi. A few choices are listed in **Table 1**.

Table 1. Pumpkin varieties for Mississippi based on mature size and time to maturity.

Variety	Size (lb)	Days to Harvest
Mini (<1 lb)		
Jack-Be-Little	<1	95
Munchkin	<1	85–95
Sweetie Pie	<1	95
Small (<8 lb)		
Spookie	5–6	85–90
Triple Treat	6–8	110
Darling	4–5	90
Early Abundance	4–6	90
Small Sugar	5–6	110
Medium (6–15 lb)		
Corvette	10–12	110
Magical	10	90
Jack-O-Lantern	7–10	100
Trick or Treat	10–15	80–90
Autumn Gold	7–10	90
Spirit	10–15	95
Large (10–25 lb)		
Casper	10–20	90
Cushaw	12–18	90–100
Early Giant	16–22	95
Mustang	17	100
Jumpin Jack	18–22	100
Connecticut Field	20+	100
Jumbo (40+ lb)		
Prize Winner	100–300	120
Big Max	50–100	120
Dill's Atlantic Giant	50–100	115

Publication 2905 (POD-09-19)

By **Jeff Wilson**, PhD, Assistant Professor, North Mississippi Research and Extension Center, and **Casey Barickman**, PhD, Assistant Extension/Research Professor, North Mississippi Research and Extension Center.

Produced by Agricultural Communications.