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Selecting Strawberries for Residential Production in Tennessee

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Strawberries are one of the most versatile home fruit crops because they can be grown in a range of small to large planting areas. They are a rapid producing crop — typically a little over a year (or even less for some types) from planting to harvest. With moderate care and small space requirements, strawberries are a crop that can be incorporated into many gardens, raised beds or even container growing areas. Additionally, residential production provides healthy and high-quality tasty fruit literally a few feet from the kitchen.

Selecting the Best Site and Growing System

For strawberries, a site with full sun and well-drained soil or growing media is essential. Additionally, there are some soil-borne diseases that can carry over from vegetable crops to strawberries, so do not plant where tomatoes or peppers have previously been grown. If drainage or previous crops are an issue, raised beds or even containers provide a good alternative because soilless growing mix can be used. More detailed site selection considerations are discussed in other UT Extension publications.

Growing Systems:

Matted Row (multi-year): Many residential growers will use a growing system where runners are allowed to grow and produce daughter plants for future production in the same bed to enable longer term production. This growing system is referred to as a matted row because of how the daughter plants grow in among the older plants. Thinning out the older plant population during renovation will allow room for runner plants to root in, reduce the potential for insect and disease issues, and promote higher yields for the next harvest. In warm, humid climates, plant health can be a limiting factor for matted row production over several years.

Annual (single-year): Commercial strawberries in the southeast are usually grown as an annual crop planted on plastic covered raised beds (often called plasticulture) in the late summer or fall. They are overwintered and harvested during the spring and early summer. Plants are removed after one harvest season, and the system is repeated with new plants starting in the fall. This method of annual production can also be used non-commercially on raised beds and can be referred to as an annual hill system used with or without plastic mulch.

Selecting Strawberries for Tennessee Climates

Strawberries are discussed here in terms of the type (June-bearing/short-day and everbearing/day neutral). Each of these types are herbaceous perennial plants with compressed stems called crowns. Runners, which are aboveground modified stems, are also a common aspect of strawberry production. Runners are often more prolific on short-day types and are produced during the longer days in summer.

Table 1. Comparison of different attributes of short day and everbearing/day-neutral strawberries.

	June-bearing/Short-Day	Everbearing/Day Neutral
Growth habit: A stolon is the botanical term for the runners sent out by the mother plant to form new plants. Roots and then crowns form at nodes along the stolon, creating new daughter plants. Stolons are a type of natural vegetative reproduction.	Runners form when days are more than 10 hours long and at least 70 degrees F. Plants typically begin sending out runners as day length increases. Daughter plants become independent of mother plant two to three weeks after formation.	More compact growth habit that may have fewer runners than short day types. May be better suited to small spaces such as containers or small raised beds.
Berry size/characteristics:	Typically large, but varies with plant age, health and time of harvest in season.	Often smaller than short-day fruit but this varies with the season and conditions.
Flower initiation: This is the time in which flower buds are set. Harvest is weeks or months later.	Buds are initiated in late summer through fall when days are shorter than 12-14 hours and temperatures are below 60 degrees F. In the spring, these flowers bloom and produce fruit.	Most everbearing cultivars are day neutral, although some are long-day. Most will initiate flower buds throughout the season, as long as temperatures are below 86 degrees F. Hot summer temperatures are an issue for productivity with these types in many warmer regions.
Harvest period: Actual harvest time will depend on cultivar of strawberry being grown and location of planting.	May into June depending on earliness of the cultivar.	Late May until first frost (typically mid-October in Tennessee). Often there are multiple flushes of fruit: early summer, mid-summer and late summer (or early fall). However, hot summer temperatures can disrupt or reduce fruiting.

Strawberry Cultivars for Tennessee

Cultivars included here were selected from those that have been trialed in the mid-south as well as newer cultivar options that could perform well in the state. Descriptions include fruit and plant attributes as well as information to assist residential growers in selecting the most suitable types and cultivars. As trials continue, these suggestions will be updated. Because newer cultivars can be harder to find, a list of potential suppliers is included at the end of this publication.

Plants can be purchased as bare root dormant plants or as actively growing plugs. It is more common to plant plugs in the annual system in the late summer/early fall, while matted row beds are usually planted with bare root dormant plants in the spring. Whether using the matted row or annual growing system, several cultivars can be grown to extend the harvest season. Purchase only virus-free plants of well-adapted cultivars from reputable sellers. In the table below, cultivars commonly grown in matted row or annual systems are noted. All cultivars have not been trialed in both types of growing system, so yield comparisons between cultivars and growing systems is limited.

Cultivar	Cultivar Description	Harvest season
	June-Bearing or Short-Day Cultivars	
Earliglow	A widely grown cultivar for early harvest and resistance to disease. Fruit has good flavor and is medium to large in size early but may decrease as season continues. Resistant to verticillium and red stele disease. Recommended for early-stage growers in matted row production.	Early
Rocco	A recently released cultivar from North Carolina State University for early harvests in annual systems in the mid-south as a possible replacement for Sweet Charlie. The fruit is medium with good flavor and seeds on the surface. This berry can be used for fresh consumption or processing. Has not been widely trialed in matted row systems.	Early
Sweet Charlie	A cultivar released by the University of Florida commonly grown in annual production specifically for early harvests of small- to medium-sized fruit with good flavor but often lower yields. This cultivar has resistance to anthracnose crown rot but is sensitive to Phytophthora. Trial information in matted row systems is limited.	Early
Strawberry Festival	This cultivar was released by University of Florida around 2000. It is a vigorous plant that produces runners well. The fruit is deep red and similar to Sweet Charlie in size, but trials have producer higher yields overall than Sweet Charlie. Have been shown have firm texture and good flavor.	Early
Camarosa	This is a warm climate variety that was bred and released by UC Davis in the 1990s. It is often used in plasticulture production and produces large, firm fruit that remains relatively consistent through the wide fruiting window. Uniform color that is a bright red and the fruit has good shelf life.	Early
Cavendish	This productive cultivar bred in Canada produces large fruit with good flavor but does sometimes ripen unevenly. Resistant to verticillium wilt, red stele and some leaf diseases. Can be used in commercial and residential production in annual or multiple year systems.	Early-Mid
Darselect	This is a productive cultivar that is adapted for a range of settings and has been grown in annual and multi-year systems. It has a large size and appearance of fruit with good flavor. Good nutrient management is needed and has shown susceptibility to leaf diseases.	Early-Mid
Honeoye	This berry performs best in cooler locations with lighter soils. Plant is productive with fruit that is easy to pick over a long season. Susceptible to two-spotted spider mites, red stele and verticillium wilt. Commonly grown in matted row production but may be limited in lifespan by disease susceptibility in our region. Likely to perform better in cooler regions of Tennessee, such as the Cumberland Plateau.	Early-Mid
Ruby June	This cultivar has a compact size with medium sized fruit that are dark red in color with reported very good flavor. Very good for jams and preservation. Commonly grown in annual production with less information on performance in matted row.	Early-Mid
Allstar	This berry has been shown to perform well across a range of climates. Fruit has an orange/red color and good flavor with a tender skin, so it does not ship well. Resistant to red stele and partially resistant to verticillium wilt. Recommended for matted row production.	Mid
Cardinal	The fruit is large and very sweet with red color throughout if picked at full ripeness. Recommended for mid-south location as cultivar was released by the University of Arkansas in 1979. Developed primarily for matted row production but may not have disease resistance of some newer cultivars.	Mid

Chandler	One of the most common commercial varieties in annual production. Released from California but grown across the mid-south. Some winter protection may be useful in colder regions of the state. Fruit is medium to large in size and can be harvested over a wide range. Susceptible to anthracnose fruit rot so is not ideal for matted row.	Mid
Flavorfest	A cultivar bred and released by the USDA in Maryland in 2012. This is a mid-season berry with bright red color and very good flavor in a wide harvest window. The plants are vigorous (use caution with N application) with large berries. Resistance to red stele and some stem and leaf diseases as well as potential resistance to anthracnose crown rot. Strong resistance suggests this cultivar can perform well in matted row production and is reported to be adapted to annual or multiple year production.	Mid
Jewel	This 1985 cultivar has fruit of good size, color and shape. Very widely grown in home gardens but susceptibility to disease requires frequent renovation and may limit productive lifespan in matted rows. Has performed well in UT trials on the Cumberland Plateau.	Mid-Late
Lateglow	The fruit is large with good flavor. The fruit is typically light red (with a tendency to be soft). The plants are vigorous with good disease resistance. Commonly grown in matted row production.	Mid-Late
Liz	This is a variety recently released by North Carolina State University and has been specifically bred for the mid-south. Fruit is medium to large in size, firm and has a good flavor. Suggested as a Chandler alternative and has produced similar yields to these standard cultivars in many annual North Carolina trials. Performance in matted row systems is not well tested.	Mid-Late
Sparkle	This older cultivar is sometimes called an heirloom as it was released in 1949. It may well be better suited to more northern climates. Fruit is soft with good flavor. Has been long grown in matted row production.	Mid-Late
Everbearing (Day Neutral and Long-Day) Cultivars		
Albion	Released by the University of California, this day neutral plant has long, symmetrical and firm fruit with a dark color and good flavor. Resistant to verticillium, phytophthora and anthracnose crown rot but susceptible to spider mites. Likely to have more runner production than some other everbearing types and suggestions are for high nitrogen fertilization than June-bearing plants. Often used for extended season greenhouse or tunnel production and less tested in multiple year systems.	
Ozark Beauty	An early everbearing type strawberry released by the University of Arkansas in 1955. Will produce runners that will bear the following year. Commonly grown in residential settings, such as raised beds, but there are concerns about its often low yield.	
San Andreas	Similar production to Albion, but with more vigorous plants and fewer runners. High quality light red fruit with good flavor. Most production and trials have been done in annual systems.	
Seascape	A well-known day neutral cultivar with good flavor and medium red color that was released by the University of California in 1992. It has reasonable size for a day neutral, along with good yields that are often highest in late summer. Fruit may split or crack during wet weather. Commonly grown in residential settings such as raised beds or containers.	
Tribute	Released by USDA in 1981. These vigorous day neutral plants generally have good disease resistance. Fruit is small to medium in size with a tart flavor. Considered to have a better flavor than Tristar.	
Tristar	Released by USDA in 1981. This day neutral plant has firm fruit with a good, tart flavor but can be small (especially in hot weather).	

References and Further Reading:

Cultivar information from recent Extension publications in the southeast and lower Midwest were used to develop these tables.

- https://strawberries.ces.ncsu.edu/strawberries-plasticulture-considerations-varieties/
- https://smallfruits.org/files/2019/06/StrawberryIPMGuide.pdf
- https://strawberries.ces.ncsu.edu/straberry-breeding-progam/replicated-cultivar-and-selection-breeding-trials/
- Book: The Mid-Atlantic Berry Guide for Commercial Growers, published by Pennsylvania State University Extension
- Home strawberries, UT video part 1 https://youtu.be/G8uGX74yzWs
- Home strawberries, UT video part 2 https://youtu.be/zR8lRYCqToc

Potential Suppliers:

https://docs.google.com/spreadsheets/d/1_G3KloWKIbFD4f8YwFue7b7nbO-lV-siBhT5IlCvoz8/edit#gid=0

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