Blueberry Variety Selection

Cultivar (variety) selection is perhaps the most important aspect of starting a new commercial blueberry planting. There are numerous productive varieties available and more continually be released from public and private breeding programs. Blueberries have several different important characteristics such as yield, fruit size, color, firmness, flavor, scar strength, disease resistance, post harvest shelf-life, etc. that contribute to adaptation in a specific area. There is a tendency to assume that newer varieties are always better but in fact it is necessary to evaluate varieties old and new in specific growing conditions to determine those best adapted. There are many fine older varieties that often may fit specific production constraints well. And newer varieties may show weaknesses or shortcomings once they are propagated and grown on a large scale over an extended period. So growers continually evaluate new varieties as they come available and change varieties when needed, replacing reliable, productive older varieties slowly only after a staged trial process.

In California southern and coastal growing areas, it is possible to harvest blueberries early in the year (February – May) when prices are often more attractive. Producing during this early period means combining very mild (frost free or nearly frost free) growing conditions with early producing low chill varieties. These varieties will begin flowering with little or no chill; some will actually produce fruit in autumn and early winter after flowering without prechilling.

Variety Patents and Licensing. Most new blueberry varieties are patented by the breeder or the breeder's representative as a means of controlling propagation and distribution to assure recovery of some of the costs of maintaining a variety development program. These costs are recovered through a royalty on the plants established by the licensed nursery and paid by the grower. In some instances, in lieu of licensing of a nursery or nurseries to control propagation and distribution, the licensee may instead be a fruit marketing company that arranges royalty payments based on the amount of fruit sold in commercial channels. Growers should check on variety availability early in planning new blueberry plantings to assure that there are no restrictions on the availability of plant material of the desired variety(s).

Blueberry Plant Types The two types of blueberries that will produce reliably in mild climate growing areas are southern highbush (SHB) and rabbiteye types. The southern highbush types are generally preferable because they are earlier and have better horticultural fruit quality characteristics. Rabbiteye varieties are vigorous, tolerate higher soil pH and other stresses, and typically produce later in the season. So, while the emphasis for off-season production is clearly on southern highbush types, there eventually may be a role for selected rabbiteye varieties in certain situations depending on the target market.

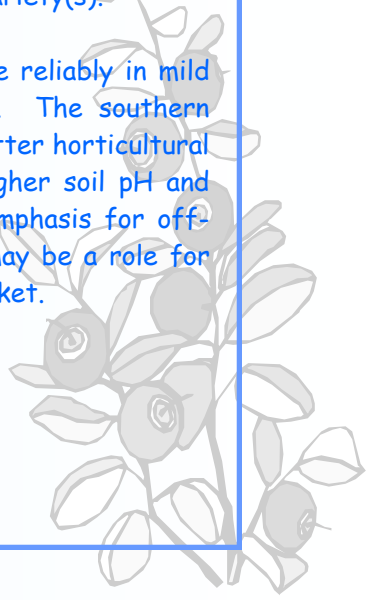

Figure xx Southern highbush blueberry plant.

Figure xx Rabbiteye blueberry plant

There are many commercial SHB blueberry varieties available through nurseries. In many countries or geographical areas, newer varieties may be protected by plant patents and their propagation and distribution limited by licensing agreements.

The lower chill requirement, early producing SHB varieties are recommended for mild winter climates. Varieties shown to be promising in diverse mild climate growing areas include the following:

Sharpblue	Star (PVP-UFL) 1/	Abundance (PVP -UFL)	Spring Wide (PVP-UFL)
Biloxi	Gulf Coast	Southmoon (PVP -UFL)	Spring High (PVP)
Misty	Ozarkblue	Snow Chaser (PVP-UFL)	Palmetto (PVP-UGA
Blue Crisp (PVP-UFL)	Jewel (PVP-UFL)	Sweet Crisp (PVP-UFL)	Rebel (PVP-UGA)
Saphire (PVP-UFL)	Emerald (PVP-UFL)	Primadona (PVP-UFL)	Camellia (PVP -UGA)

1/PVP - Plant variety protection indicates a patented variety. UFL indicates patent and licensing rights controlled by the University of Florida, Florida Foundation Seed Producers, PVP-UGA indicates patent and license rights controlled by the University of Georgia.

The harvest period varies with the growing area and across growing seasons depending upon chill hour accumulation and the heat unit accumulation during the period from February to May. The following graph illustrate the harvest period for selected varieties at coastal and southern California growing areas.

Typical harvest periods at coastal and southern California sites[1/]

Variety	February	March	April	May	June	July	August
Star		XXXXXXXXXXXXXXXXXXXXXXXXXX					
Sharpblue		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					
Jewel		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					
Emerald	XXXXXXXXXXXXXXXXXXXXXXXXX						
Saphire	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					XXXXX	
Misty		XXXXXXXXXXXXXXXX					
Gulf Coast			XXXXXXXXXXXX				
Biloxi			XXXXXXXXXXX				
Southmoon			XXXXXXXXXXXXXXXX				
Blue Crisp				XXXXXXXXXXXXX			
Legacy				XXXXXXXXXXXXX			
Ozarkblue				XXXXXXXXXXXXX			

[1/]assuming frost free or frost protection

Note: the recently released SHB varieties Abundance, Primadona, Sweet Crisp, Snowchaser, Spring High, Spring Wide, Rebel, Camellia, and Palmetto also appear to have sufficiently low chill requirement to be well adapted to coastal and southern California but information is not yet available on the harvest periods for these varieties.

The productivity of these varieties varies markedly with the area where they are grown, the soil type, and the time of year they produce. A mix of appropriate varieties will enable growers to combine desirable horticultural characteristics such as plant vigor, plant yield and quality with production during periods of desired market window(s). It is important that the different varieties be evaluated in each selected potential production area. The production and production period is largely determined by an interaction among 1) the chill-hours available in the area, 2) the variety, 3) the heat unit accumulation during flowering and fruit ripening, and other cultural practices such as pruning and soil and water management.. Even among varieties having similar chilling requirement there are variations in ripening time and harvest date due to differences in heat unit requirements for flowering and fruit development. These factors interact with each other and can markedly affect production and they illustrate why varieties can vary dramatically even in what appear to be similar growing environments.

The SHB varieties have less winter hardiness as a group than the NHB varieties but that is not an issue in the mild winter areas and the SHB varieties continue growing late into the fall or winter or in mildest areas remain green year around. The earliest producing varieties tend to have the lowest chill requirement These earliest varieties also are most susceptible to frost and in areas where there is threat of frost or the plants are not in protected tunnels, frost protection will be needed to prevent blossom or fruit damage. So, the earliest market window with the most attractive prices carries the additional greater frost risk and the additional frost protection investment.

Additional considerations Many growers are replacing Sharpblue and Misty with newer low chill varieties such as Emerald and Jewel, because Sharpblue tends to produce smaller fruit and has a reputation also for a leaky scar end. The Gulf Coast variety also has been replaced on many farms because while it is early, vigorous, and productive, a high percentage of the fruit retain their stems when picked and this requires additional labor to remove these stem pieces prior to shipping. The plant shape may also be an important consideration. More upright varieties such as Star require less pruning and this can reduce costs. Larger fruited varieties such as Emerald and Jewel may also reduce harvest costs and in some markets the larger fruit may be more desirable. But the larger size of fruit may also affect fruit firmness or flavor. Some varieties are more flexible with regard to harvest period – Saphire, Emerald, and Sharpblue, tend to flower multiple times during the year in mild climate zones and this may enable production during additional fall harvest windows.