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Blueberry
Low-Chill *Vaccinium* Species

By Don Merhaut, Extension specialist with UC Riverside's Department of Botany and Plant Sciences
Kathie Carter
Cooperative Extension/ Botany Plant Sciences Dept.
University California Riverside

Introduction:
The ericaceous family is quite diverse, and includes azaleas and rhododendrons. Within the genus of *Vaccinium*, tasty favorites include lingonberries, and cranberries. It is only within the last decade that the *Vaccinium* - the blueberry- has immigrated to southern California in any substantial way. These plants require acidic soil (4.5-5.5) and some chilling which helps them to produce flowers and fruit. Donald Merhaut has been leading field trials with *Vaccinium* varieties, new and old, for four years.

History:
Low-chill blueberry production began in Florida in the late 1800's with the collection and cultivation of wild *V. ashei* by M.A. Sapp. Eventually, commercial growers began collecting any wild type *V. ashei*, which resulted in the production of poor quality fruit. The production of substandard fruit resulted in the decline of the rabbiteye industry, especially when the USDA introduced much higher quality highbush blueberry cultivars in the 1920's. Collection of *V. ashei* resumed in the 1930's by Jackson M. Batchelor of the USDA. However, development and breeding of both rabbiteye and highbush blueberries discontinued in the 1940's when most of the U.S. resources were directed to the efforts of World War II (Sharpe, 1954). It was not until 1951 that Ralph Sharpe from the University of Florida reestablished the blueberry breeding program, which is currently under the direction of Paul Lyrene.

Varieties:

***Rabbiteye Blueberry**. Cultivars classified as true rabbiteyes are derived wholly from the selections of the blueberry species *ashei* that were collected primarily from southern Georgia and northeastern Florida. The common name of 'rabbiteye' was established because the flower scar tends to look like a rabbit's eye. In 1951, Ralph Sharpe from the University of Florida began collecting and breeding *V. ashei, darrowi*, and other *Vaccinium* species native primarily to Florida, Georgia and Alabama (Lyrene, 1998). In 1974, Paul Lyrene joined the University of Florida and continued the breeding program along with Wayne Sherman (Ballington, J.R., 2001). As a result of their efforts, many rabbiteye cultivars of high fruit quality are now available. Some plant performance traits specific for rabbiteye blueberry, as observed in Florida and Georgia, are listed below:

Fruiting – It is recommended that most rabbiteye cultivars be planted with other cultivars for cross-pollination.

Disease resistance – On the east coast, rabbiteye are supposedly more resistant to *Phytophthora* than highbush and lowbush cultivars. *Phytophthora* can be a problem in areas of the southeast U.S. when the water table rises close to the surface during the summer rainy season.

Plants are also more resistance to drought than highbush cultivars. However, due to the very sandy soils of the Coastal Plains of the Southeast Georgia, Alabama and northern and central Florida, two weeks without rain is considered a drought. How tolerant this is in California, remains to be seen.

***Southern Highbush Blueberry**. The development of southern highbush blueberries started around 1951. Ralph Sharpe's breeding program encompassed both rabbiteye breeding and the development of southern highbush types. Arlen Draper of the USDA developed crosses with *V. darrowi* x *V. elliottii*, which are still used in southern highbush breeding programs. Most cultivars that have been developed are the result of crossing highbush (*V. corymbosum*) with the southern species, *V. darrowi*. However, additional plant diversity and adaptation are provided by *V. angustifolium, V. ashei, V. constablaei, V. tenellum* Ait., *V. fuscatum* and *V. myrsinites*. Currently, Paul Lyrene continues to emphasis the breeding of low-chill southern highbush blueberries.

Fruiting – Most cultivars are self-fruitful. This trait has made southern highbush currently more popular than rabbiteyes.

Disease resistance – Since southern highbush has *ashei*, *darrowi*, and other southern species in its parentage, it is considered more resistant to *Phytophthora'* than the northern cultivars.

Blueberries in California, for both commercial and ornamental purposes, are becoming very popular. Like other plants, blueberry growth (i.e. the evergreen characteristics), is much different in California than the blueberries grown in other states, so cultural requirements for California may be slightly different as well. In addition, the cultivar selection is going to expand as other subtropical and Mediterranean regions such as New Zealand, Australia, and South America pursue blueberry breeding and production programs.

Planted into the ground in southern California, these shrubs need the same attention as an azalea, except blueberries need full sun.

Once established, watered regularly and fed occasionally with an acid type fertilizer they likely will be happy for years.

Leaf color varies with cultivars. Many rabbiteye cultivars are glaucous blue. Most other varieties are green.

If it's cold enough, 'Misty' will get dark crimson-colored leaves in the fall. The leaves alone could be the show, but there's more. The flowers arrive in early spring. The blooms look like miniature paper lanterns. The tiny berries are like polished pebbles. As they fatten, pinks and violet tones blush across their skins. At maturity they are corpulent and irresistible in deep blue, purple and black.

It wasn't until the mid-1990s that cultivars from the southeastern US came into our landscapes. Southern high-bush cultivars that required significantly less chill time than their northern counterparts were crossed and refined until the resulting plants could thrive in the glare of a Hollywood summer.

Remarkably, it is now possible to grow *Vaccinium* that produces fruit nearly year-round. In April, varieties such as 'O'Neal' begin to bear. 'Climax' is a good choice in June/July, and for July/August berries, a new blueberry from New Zealand called 'Maru' will produce reliably as well.

Experts recommend that you plant at least two varieties at a time for optimum flower and fruit production. Simply knowing you'll need variety and that each cultivar can grow differently will be more exciting when planning and planting Blueberries in the garden. You can get fancy and prune your plant's fruit-bearing stems from last year, a process that will make new berries grow bigger. Or you can thin this year's new growth to promote larger fruit. Or you can let your plants grow naturally and see how they turn out.

Bibliography:

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2. The California Garden, by Tony Kienitz, Special to the Times, March 2, 2006.

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