

July is National Blueberry Month

Blueberries are members of the Ericaceae family, which includes rhododendron, azalea, Indian pipe, heath, cranberry, and huckleberry. Most members of this family require acid soils for good growth and reproduction.

The Ericaceae family is divided into four subfamilies: The Vaccinioideae contains the genus *Vaccinium* which, in turn, contains the subgenus

Cyanococcus-the true (or cluster-fruited) blueberries. Within *Vaccinium* are approximately 400 species, most of which occur in Malaysia. The 26 species that occur in North America include whortleberries, deerberries, bilberries, sparkelberries, cranberries, lingonberries, and blueberries. The ten-seeded fruit of the huckleberry (*Gaylussacia* spp.) is often confused with the many-seeded blueberry fruit, but these plants are in different genera.

Three major types of blueberries are harvested commercially. The lowbush blueberry is harvested from managed wild stands in the eastern provinces of Canada and the northeastern United States. The rabbiteye blueberry is grown in the southeastern United States. The highbush blueberry is the major cultivated species in North America. It occurs in native stands from southern Nova Scotia west to southern Wisconsin and south along the Atlantic Coast to eastern Texas.

Mature highbush plants are 6 to 8 feet tall. Several canes are produced from the crown each spring, and canes live for many years. Flower buds form in the fall, and plants produce fruit about 2 months after flowering in the spring.

Blueberries can be grown in most parts of West Virginia with attention to a few requirements. Wild blueberries and huckleberries that can be found in many parts of West Virginia are not grown commercially. We will be talking about growing highbush blueberries which is the species commonly grown commercially.

If you want to plant blueberries observe the natural vegetation of the site. Are there plants like wild blueberries, huckleberries, azaleas, laurel, native spiraea or hardhack growing in the area you want to plant blueberries? That is a good sign that your soil would be good for blueberries. If not, there are several measures that need to be taken for a successful planting.

Proper site preparation should begin at least a year prior to planting. Soil tests, perennial weed control and organic matter incorporation in the planting strips should be priority measures for the new planting. Blueberries require soils high in organic matter, therefore, additions of well rotted sawdust may be mixed with the soil in the planting hole. These materials are also useful as mulch around the plant to control weeds and conserve moisture. Six inches of mulch should be applied at planting and at least an inch replaced annually to the soil around the plants.

Blueberries have shallow roots and require frequent irrigation. But they do not like having wet feet, so be sure the soil is well drained. If the soil is not well drained, hilling the planting row a foot or so above the aisle will help keep the roots out of standing water.

Blueberries grow in acidic soil in a range of pH from 4.0 to 5.2 with the optimum from 4.5 to 4.8. Soil more alkaline than this can be corrected by the addition of sulfur. If ferrous sulfate is used to increase acidity, multiply the number of pounds indicated for sulfur by 6.

Preparing the soil for planting is much the same as preparing for a home garden. To find out the pH and fertility of your soil, have the soil tested prior to planting by the West Virginia University Soil Testing Lab. It is a free and valuable service. Cover crops or legume sod should be tilled in late fall or early in the spring. Any fertilizer recommendations from the soil analysis should be added and mixed in with the soil in the spring when the soil is worked up for planting. Follow the directions for Growing Blueberries in West Virginia available on our website for further information on fertilizing blueberries.

One of the most common deficiency symptoms seen in blueberry is iron chlorosis. This is characterized by a yellowing or interveinal chlorosis of the leaves while the veins remain green. Symptoms first appear on the young

shoots. Only in advanced stages is the yellowing seen on older leaves. Iron chelate worked into the soil around the base of the plant or applied to the leaves as a foliar spray should eliminate the symptoms within a month.

Order the plants well in advance of planting to ensure you get large plants of the desired cultivars. Highbush cultivars should be selected to allow a range of harvest dates so that harvest labor can be spread out. More than one cultivar is suggested to provide cross pollination which results in larger berries. Plant blueberries as early in the spring as possible. Plants should be set four to five feet apart with enough room between rows to allow equipment to pass.

Pruning is essential to produce large berries and vigorous plants. For the first two years the flower buds should be pruned off the plant to allow it to become established. Fruit is produced only on growth from the previous season. The best fruit is produced on strong wood that is about pencil thick. Once branches get to thin to have good fruits, the whole cane should be removed at the soil level. Renewal shoots coming from the base of the plant should be encouraged to replace the current fruiting wood. Canes usually should not be kept more than five years. Try to keep an equal number of one-, two-, three-, four-, and five-year-old canes. Try to keep the canopy open to intercept the maximum amount of light and allow air to circulate.

Blueberries grow in clusters and range in size from that of a small pea to a marble. They are deep in color, ranging from blue to maroon to purple-black, and feature a white-gray waxy "bloom" that covers the surface serving as a protective coat. The skin surrounds a semi-transparent flesh that encases tiny seeds.

Health benefits of Blueberries

Blueberries are literally bursting with nutrients and flavor, yet very low in calories. In research at Tufts University, Blueberries came out on top, rating highest in their capacity to destroy free radicals. Packed with antioxidant phytonutrients called anthocyanidins, blueberries neutralize free radical damage to the collagen matrix of cells and tissues that can lead to cataracts, glaucoma, varicose veins, hemorrhoids, peptic ulcers, heart disease and cancer. Anthocyanin, the blue-red pigments found in blueberries, improve the integrity of support structures in the veins and entire vascular system.

History

Blueberries were here when the first settlers arrived in America. The indigenous people dried the fruits for winter use. Because high-bush blueberries were not familiar to Europeans, the fruit received little attention from agriculturists until the late 1900s. The blueberry is one of the most recently cultivated major fruit crops, having been domesticated entirely within the 20th century.

Production

Michigan leads the states in Highbush blueberry production by harvested acres followed by New Jersey, Georgia, North Carolina, Oregon, Washington, Florida, California, New York, Indiana, Arkansas, and Alabama. Maine is the nation's largest producer of wild blueberries. Over the last 3 years the wild crop averaged 83 million pounds, 30 percent of the U.S. blueberry production (cultivated and wild combined). Next to strawberries, blueberries are the second most important berry in the United States. Over 3 years (2000-02), cultivated and wild blueberry production combined generated over \$200.0 million in farm value, about 13 percent of the U.S. berry production. The U.S. strawberry crop generates over \$1.0 billion in farm value. Strawberry production averaged 1.8 billion pounds while blueberry production averaged 273.0 million pounds during 2000-2002.

Blueberries are enjoyed both fresh and processed. Processed blueberries are mostly frozen or dried and often used as an ingredient in the manufacture of many other processed products such as baked goods, yogurt, and ice cream. Dried blueberries are ingredients in cereal and cereal products as well as many snack food products. Blueberries are also processed into jam/jellies, syrup, juice/concentrates, and baby food.

Aside from the good taste and health benefits that blueberries offer they are probably the easiest fruit to prepare for eating because it does not require any peeling or slicing. After washing, the berries are ready to be eaten, either by itself, with cereals, or in fruit salads.

Blueberries are available locally in season. Remember to support our local farmers and purchase local produce in season.

2009 Master Gardener Classes

The West Virginia University Extension Service conducts the Master Gardener program in West Virginia with individual county programs. Locally there are two training programs planned for the Fall of 2009. One program will be in Martinsburg and one will be in Berkeley Springs. The training provides gardeners with the opportunity to improve their horticultural knowledge and then share their experience with the public through organized volunteer activities. Topics covered include: botany, soils, pest management, plant problem diagnosis, fruits, vegetables, landscape design and plant propagation. The classes run for 11 consecutive weeks. This year classes will be offered in two locations in the Eastern Panhandle. The fee for materials is \$100. The Berkeley/Jefferson County class will be held on Tuesdays (from 1:00 p.m.-4:00 p.m.), beginning September 1, 2009. The Morgan County class will be on Thursdays (from 6:00 p.m.-9:00 p.m.), beginning August 27th. The Berkeley County Extension Office is located at 400 West Stephen Street, Suite 302, Martinsburg telephone 304-264-1936. The Morgan County Extension Office is located at 129 Fairfax Street, Berkeley Springs, telephone 304-258-8400. If interested in becoming a Master Gardener, contact the respective Extension Office. For an application for the Berkeley/Jefferson class go to the <http://www.berkeleyextension.com> website under the Agriculture and Gardening section listed as Master Gardener Class Application. Applications will be accepted for the Fall 2009 Berkeley/Jefferson class until noon on Wednesday, July 29, 2009. Due to space limitations, it is possible that not everyone who applies for the 2009 class will be accepted. Please note the Master Gardener Program is not a class for beginning gardeners. Gardening experience is required.

West Virginia Gypsy Moth Suppression Program

The Gypsy Moth Suppression Program is a cooperative regional suppression program between landowners, the County Commissions in the generally infested counties, The West Virginia (WVU) Cooperative Extension Service, WVDA, and the United States Department of Agriculture, Forest Service (USDA-FS). Aerial treatments will be done in the generally infested area on a demand basis only to minimize the damage to forests and reduce the impact of the gypsy moth in future years. Treatments will not be done with the intent of eradicating the pest. Landowners in the 34 participating counties of West Virginia that have had problems with the gypsy moth may sign up for the program any time between now and the end of August at the West Virginia University (WVU) Extension Service county office, or through the WVDA offices at: Charleston (304) 558-2212, Elkins (304/637-0290), New Creek (304)788-1066, or Morgantown (304) 285-3133. The completed applications must be submitted by August 31, 2009. Brochures about the gypsy moth and the 2010 CSCL Program are also available from Extension agents or they can be downloaded from the WVDA website at www.wvagriculture.org. A gypsy moth egg mass survey is needed to determine if your property qualifies for the CSCL Program. Contact your local Extension agent or the WVDA's Charleston or Elkins offices to obtain an egg mass survey application. This form may also be downloaded from the WVDA website. Landowners must provide a 7.5 minute topographic map with their property boundaries clearly marked, or an ESRI shape file projected in UTM Zone 17 - NAD 83. The WVDA cannot map your property for you. Topographic maps are available from the United States Geologic Survey at 1-800-ASK-USGS or their website at <http://store.usgs.gov>. A topographic map of the property must be attached to the application. Keys or combinations for locks must be provided with the application at the time of sign up in order that the egg mass survey evaluation can be completed. The minimum acreage required to participate in the CSCL Program is 50 contiguous acres or more of wooded land. If you have fewer than 50 acres, you may contact neighbors and join their property with yours to meet the minimum acreage requirement. Treatment blocks must be made as rectangular as possible in order to be treated properly by aircraft without incurring significant overspray. The presence of electrical transmission lines, communication towers, etc., may prohibit some proposed treatment blocks, or portions of these blocks, from being treated. Treatment costs vary from year to year depending on the aerial contract cost (i.e. fuel, pesticide, and spray application). In the past the WVDA received cost sharing dollars from the USDA-FS that paid approximately 50 percent of the actual treatment cost. According to the USDA-FS, this cost sharing may no longer be available. If the cost sharing is no longer available the WVDA would still contract for the aerial application and pesticide and should be able to obtain a less expensive cost than private landowners working on their own. A final decision to participate in the program must be confirmed by the landowner signing a contract and making a deposit to the WVDA by December 5, 2009. The amount remaining must be paid to the WVDA prior to actual treatment. Notification of the deadline for final payment will be made by mail. For more information, contact Gary Gibson, Director or S. Clark Haynes, WVDA, Assistant Division Director of the Plant Industries Division in Charleston, at 304-558-2212 or Quentin "Butch" Sayers, WVDA, Gypsy Moth Program Manager, at 304-788-1066.

Additional information and assistance may also be obtained through you local WVDA offices located at: Charleston (304) 558-2212, Elkins (304) 637-0290, Morgantown (304) 285-3133, and New Creek (304)788-1066. Or on the WVDA New Creek Web site at <http://wvdanewcreek.home.comcast.net>

July 18, 2009-Food Preservation Workshop

Just as home gardens and farm markets are brimming with produce, a timely food preservation workshop will be given on Saturday July 18, 2009 at Trinity Episcopal Church, 200 West King Street, in Martinsburg. Guest speakers including, Sue Flanagan, Berkeley County WVU extension agent, and Master Gardeners will give demonstrations and provide directions on proper food handling, crop selection and home preservation of fruits and vegetables. The speakers will demonstrate the different methods of preservation such as canning, freezing, vacuum sealing, drying or cold storage and discuss how to choose the best varieties of produce from the garden or the market. There will also be educational exhibits, light refreshments and door prizes. The workshop is free and open to the first 60 participants that pre-register by calling 304-264-1936. Sign-in will be from 8:30-9:00am and the workshop will be 9:00am-11:00am. Please use the entrance and parking lot on the College Street side of the church. This workshop is sponsored by the Berkeley County WVU Extension Service, Berkeley Jefferson Master Gardener Association and co-sponsored by Trinity Episcopal Church.

Berkeley County Youth Fair Dates and Dates to remember

- Poultry Blood Testing - Saturday, July 18, 2009 from 9:00 am to 11:00 am.
- 62nd Annual Berkeley County Youth Fair dates are August 3 - 8, 2009
- West Virginia State Fair dates 14-22, 2009. For more information on the WV State Fair go to <http://www.statefairwv.com/>
- Penn State Agricultural Progress Days August 18 - 20, 2009 for more information go to <http://apd.psu.edu/>

Garden Tips

- Remove raspberry canes after fruiting
- Turn compost
- Seed collards and kale for fall

Until next time...Happy Gardening and Farming!

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