November 2019-Vol.5 No.11

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November in the Vegetable Garden

By Ralph Morini | November 2019-Vol.5 No.11

As wet as the 2018 gardening season was, 2019 was hotter and drier. Instead of issues with fungi and mildews, we had to battle thirsty small mammals and insects. More manual watering means a greater time commitment and for those of us with home water limitations, a nerve-racking requirement. I was appreciative of the efficiencies of my raised beds this year and worked at mulching to reduce watering needs. Gardeners are nothing if not adaptable.

For some of us, November means a focus on nurturing cool weather crops a little longer with row covers, cold frames, or greenhouses. See Cleve Campbell's article Extending the Gardening Season from the September 2018 *Garden Shed* for guidance.

For others, it's clean up time. This means removing all old vegetation and produce, especially diseased material. Good hygiene now will reduce disease and insect risks next season.

Once you get the garden cleaned, there are a couple of steps that, taken now, will benefit your garden in the spring. Tilling organic matter into the soil in the fall, allows decomposition to progress over winter and will improve soil characteristics in next year's garden. Compost and chopped leaves are good candidates.

Photo: Raised bed winterized with a layer of organic mulch

After the soil is amended, it's wise to protect it over the winter with a mulch or cover crop. An organic mulch applied now will help moderate soil temps over the winter, reduce nutrient and carbon loss and enable you to plant earlier in the spring. Again, leaves are a convenient mulch for many of us. Run them over a couple of times with a lawn mower and spread a 2-3" layer on the soil. Straw, wood chips, sawdust and other organic mulches are also good but leaves generally need to be dealt with anyway, are cheap and break down quickly, so are a great option.

Photo: Crimson clover growing in as cover crop in raised bed

Cover crops are another alternative and maybe a preferable one. It's best to start them about a month before frost, so, depending on the weather, it may be late for planting. But if the warm weather pattern holds a few weeks longer than usual, germinating a cover crop may be possible. Rake the garden surface smooth, broadcast cover crop seed per directions, rake lightly and irrigate. Winter kill cover crops will die off after a few hard frosts and the dead vegetation serves to protect soil, hold weeds down and provide organic matter in the spring. Winter hardy cover crops will grow slowly or go dormant in winter but restart in early spring. Legumes will enrich the soil by fixing nitrogen in their roots, reducing compaction and building soil structure. In the spring, cut the tops prior to their going to seed and turn it in or compost it. As noted last month, more information on cover crops can be found in earlier *Garden Shed* articles including Cover Crops from September 2015 and Minimum Till Cultivation from the February 2019 issues.

Photo: Fall leaves and grass clippings getting a compost batch underway

November is also a good time to start a **compost batch**. Final lawn mowing and leaf removal generate a

great mix of nitrogen and carbon based organic materials to get decomposition started. Microbial activity will definitely slow down during the dead of winter, but with a little mixing to keep it aerated and good moisture management, it will be primed to take off as temps rise in early spring. It also provides a place to deposit kitchen fruit and vegetable cuttings during the winter to give the pile a nitrogen boost that will speed the decomposition process and help get the compost to a ready-to-use state for next summer's gardens. The finer you chop the materials, the faster they will break down. Check out this article from the January 2018 issue of The Garden Shed for detailed advice.

November may be your last chance to get your garden documentation in order. Knowing what you planted and where you planted it is important. Good crop rotation practice helps minimize disease and insect issues next year. Also, noting the crops and varieties that did and didn't do well provides guidance as you shop for seeds and plants for next year's garden.

Other tips from the Extension Service include:

- **Root crops** such as carrots, radishes, turnips and parsnips **store well outdoors** in the ground. Just before the ground freezes, bury these crops under a deep layer of leaves or straw. Harvest as needed during the winter months.
- If you are a fruit grower, November is a good time to **mulch fruit trees.** Extend 2-3 inches of mulch to the edge of their canopy, but keep it a few inches away from the trunk to prevent potential rodent damage.
- **Early November is a good time to plant most new fruit trees.** Mulching advice is the same as for established trees.
- **Fallen, spoiled or mummified fruits should be cleaned up** and destroyed by burying or placing them in the trash. Good sanitation practices reduce re-infestation of insects and diseases in the following seasons.
- **Mulch strawberries** with straw or leaves. This should be done after several nights near 20ºF but before the temperature drops into the teens. Apply the straw or leaves loosely but thickly enough to hide plants from view.
- **Now is a good time to collect soil samples** to test for pH and nutrient levels. Organic amendments are typically slow acting so application in the fall improves soil for spring planting. A free soil testing kit is available at your local Extension Office. The Charlottesville-Albemarle Extension Office is located in the County Office Building on 5th Street Extension, 460 Stagecoach Road, Charlottesville. Tel. (434) 872-4580.
- Don't forget the **garden hoses: drain and roll up and store on a warm sunny day**. It's difficult to wind a cold water hose into a tight coil. Also, be sure to shut off and **drain rain barrels, outdoor water pipes and irrigation systems** that may freeze during the cold weather.
- **Rhubarb** plants that are four years old or more can be **divided and transplanted**. Prepare the site by digging deeply and incorporating compost. Your efforts should be rewarded with a good yield in upcoming years.
- **Prepare a spot in the garden NOW for early planting of peas.** This way you'll be all ready for planting peas in the spring, before the soil dries out.
- **Tidy up the asparagus bed.** Cut off the tops of the plants to about 3-4″ above the soil level. Weed, and add a winter dressing of compost or aged manure to the bed.

- If you have been thinking about installing a **deer fence** around your vegetable garden, the fall and winter months are a good time to **build** it.

Sources:

Cover photo: ufl.edu, Molly Jameson

Virginia Cooperative Extension, Albemarle/Charlottesville, November Monthly Horticulture Tip Sheets, Va. Coop. Ext. Monthly Tip Sheets

https://albemarle.ext.vt.edu/content/dam/albemarle_ext_vt_edu/files/hort-tip-sheets/11-14-vegetables.pdf

Row Covers: A Gardening Season-Extender With Benefits

By Ralph Morini | November 2019-Vol.5 No.11

As we enter the countdown to our first frost, many gardeners think about ways to extend the growing season to protect fall crops or to maintain hardy crops into and maybe through the winter. A quick investigation of options reveals myriad choices from DIY milk jug plant caps to water-filled plastic plant and row protectors to row covers, cold frames, hot beds and all manner of hoop houses and greenhouses. Each has a story of its own and may be the right solution for a given individual, depending on the gardening objective, budget, and level of commitment length. This article will focus on the benefits and construction of floating and hoop-supported row covers as simple, inexpensive and practical solutions that can extend both ends of the gardening season and provide some other in-season benefits as well.

Row Cover Basics

There are two common types of row covers in use today: **floating row covers** and **hoop-supported row covers**.

Floating row covers: Photo courtesy of University of Maryland Extension.

- **Floating row covers** use a spun bonded polyester fabric or plastic insect netting that is laid

loosely but directly over the plants to be protected. The fabric can be held in place by anything with weight — from soil to bricks, stones, boards or pegs. Fabric covers offer as much as 4-5°F frost protection, although it is less for vegetation that is in direct contact with the fabric. This allows earlier planting in spring and extension of the fall harvest. Both fabric and netting provide insect protection. Coarser netting will keep out larger pests like caterpillars and moths. Finer nets exclude aphids, thrips and the like, which are vectors for diseases beyond the physical damage they do to plants. Floating covers are best used on relatively short crops, and they must be removed prior to flowering on fruiting crops that require pollination.

Hoop-supported row cover, also known as a low tunnel. Photo courtesy of University of Maryland Extension.

- **Hoop-Supported Row Covers**, also called *low tunnels*, sport some kind of hoop structure beneath a fabric or plastic cover. The tunnels provide more temperature protection than floating covers but are temporary and are conveniently removable, allowing flexibility for crop rotation, cover cropping and general soil building. Plastic covers come in various thicknesses. Thicker material is more rugged but reduces light transmission. Plastic can offer as much as 10°F frost protection, but can generate harmful condensation levels, so requires more effort at ventilating the tunnels. Obviously, the plastic isn't permeable, so crops in the tunnel must be irrigated. The same spun bonded fabric used in floating covers can be used on the low tunnels, with similar levels of temperature and insect protection, but with greater accommodation for taller crops. Depending on the fabric weight, up to 80% of light transmission reaches the crop. Fabrics do pass rain water, and in fact, can reduce crop damage from very heavy rains. All tunnels must be opened to allow for pollination.

Kale grown under fabric (top photo), insect net (middle) and no row cover (bottom). Photo courtesy of Va. Cooperative Extension, Pub.HORT 291)

Beyond the benefits already noted, hoop-supported row covers have proven to reduce evaporation, resulting in less water use and less moisture stress in plants. In fact, **numerous studies have documented superior vegetative growth in fabric-covered low tunnels** compared with insect netting and uncovered crops as shown in the photo above.

Construction

Floating row covers require only a purchase of **appropriate fabric.** Fabric is available from good garden centers and many catalog and on-line sources. Weights range from about .55 oz. to 3 oz. The lightest are good for light and water transmission and general frost protection but are the shortest-lived. The heaviest

are more for overwintering protection. Most come in rolls about 10 feet wide by 50 feet long or larger. With careful handling, a good quality fabric may last a couple of years.

Hoop-supported row covers use the same fabric. The 10-foot width fabric works well on my 4-foot wide raised beds. I cut ¾" diameter pvc tubing into 8-foot lengths. Then slide the ends over two ½" rebar pegs driven into the ground on each side of the bed. The tubing forms about a 3-foot high hoop, leaving ample clearance for the plants. The ten-foot wide fabric overlaps enough on each side of the hoops to provide a hold-down surface. A few photos illustrate this simple and inexpensive row cover system.

- Cut ½-inch rebar into lengths about 16-18" long. Length depends on your soil. The pegs need to find some hard soil to make a secure mount for the hoop, so if you are a raised-bed gardener they need to pass through your well-worked soil and into the hard pan below. They should extend above the soil surface by about 8 inches.

Photo: Slide ¾" pvc tubing hoop over ½" rebar pegs

- Purchase a roll of coiled ¾" diameter pvc tubing. Cut it with a hack saw to an appropriate length for your situation. I use 8-foot lengths for my 4-foot wide raised beds and get a 36-inch hoop height which is good for the greens I grow under them. Slide the tube ends over a pair of rebar pegs to make a hoop.
- Space the hoops 3-4 feet apart to support your fabric.
- Lay the fabric over the hoops, allowing enough overlap on the edges to provide an anchoring surface.

To hold the fabric on the hoops, make clips out of short lengths of the tubing. Cut tubing to a length of 4 inches or thereabouts and with a sharp scissors cut a gap along its length. Make the gap about a 3/8″– 1/2″ long (see photo at left).

The tube is flexible enough to enable it to slide over the fabric and around the hoops, making a secure clip.

- Apply clips to the sides and tops of the hoops and add hold-downs to the ends of the tunnels, and you are in business.


Photo: Shows clips securing fabric to all hoops. Note rebar holding fabric on near end

The Benefits

I was driven to try row covers after losing a couple of kale and collard crops to cabbage moths. Not wanting to go the chemical route, they offered a way to get both an earlier start and good plant protection. In any case, they worked. Since the greens don't need to be pollinated, the covers can stay on all summer and into the winter. The greens can often survive our winters without cover, but their dormant time is lessened by the row covers, allowing harvest for an added few weeks.

There are lots of ways to execute row covers, both purchased and do-it-yourself varieties. The one shown here is inexpensive, easy to do yourself. and quick to set up and take down. In any case, it works for me. If you have some hardy crops for which you would like to extend harvest, why not give them a try?

Sources:

"Season Extenders,"www.pubs.ext.vt.edu/426-381_pdf

"Floating Row Cover," https://extension.umd.edu/hgic/topics/floating-row-cover

"Low Tunnels in Vegetable Crops: Beyond Season Extension," www.pubs.ext.vt.edu/HORT-291.pdf

Pesticide Storage and Disposal

By Penelope Fenner-Crisp | November 2019-Vol.5 No.11

The outdoor growing season is essentially over. Activity has shifted to completing the winterizing and clean-up. After finishing these tasks, you can turn your attention to next year—what to grow, when to plant, what materials you already have for the next season, what additional products you may need to assure success.

CLEANING UP

Oh, but wait a minute! Back to the clean-up. Before closing up the garden shed/storage site, let's take another look at all the bags, bottles and other containers holding the grass seed, fertilizers and — pesticides. Will these products still be usable come Spring? Grass seed may include a "Use by" date but generally is considered to be best used within a year of purchase, although, depending upon the type, can stay substantially viable for 2-3 or more years.[1] Fertilizers last for many years, if stored under dry conditions in intact packaging—and, for safety reasons, away from other chemicals. [2]

Photo: tn.gov

WHAT IS A PESTICIDE?

Pesticide law defines a pesticide active ingredient (with certain minor exceptions) as: Any substance that prevents, destroys, repels, or mitigates a pest, or is a plant regulator, defoliant, desiccant, or nitrogen stabilizer. There are several categories of active ingredients:

1. **Conventional**, which are all ingredients other than biological pesticides and antimicrobial pesticides. Common pesticides that fall into this category are glyphosate, permethrin, carbaryl (Sevin®), the neonicotinoids.

2. **Biopesticides**, which are types of ingredients derived from certain natural materials, such as insect pheromones, citronella, neem oil.

3. **Antimicrobials,** which are used to destroy or suppress the growth of harmful microorganisms whether bacteria, viruses, or fungi on inanimate objects and surfaces, such as triclosan, hydrogen peroxide, sodium

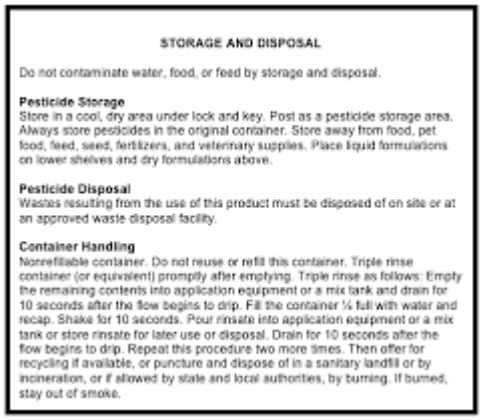
hypochlorite (Chlorox®).

Each of these categories may be subdivided further into insecticides, fungicides, herbicides and rodenticides.

STORING PESTICIDES

If stored properly, most pesticide products remain viable for more than one year. All pesticide formulations must be subjected to a storage stability test before being approved for sale.[3] If the formulation fails to reach the one-year mark, the label may include an expiration date, prominently displayed as ‘‘Not for sale or use after [date].’’

Fortunately, **EVERY label of EVERY pesticide product** approved for sale to homeowners and professional applicators alike **must include a section on Storage and Disposal.**



STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage
Store in a cool, dry area under lock and key. Post as a pesticide storage area. Always store pesticides in the original container. Store away from food, pet food, feed, seed, fertilizers, and veterinary supplies. Place liquid formulations on lower shelves and dry formulations above.

Pesticide Disposal
Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling
Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Source: epa.gov

This is true for every kind of pesticide, whether it be a conventional chemical like glyphosate or a safer, certified “organic” like insecticidal soap. While there may be some variations in the directions, based upon the ingredients in the pesticide formulation, physical form (*e.g.*, liquid or granular) and container type, **a few universal principles apply**:

1. Store in original container at cool temperatures (neither freezing nor upwards of 100°F).

2. Do not let products contaminate food, feed or water.

3. Keep away from children and pets, preferably in a locked area.

4. Do not burn/incinerate containers on site.

5. Dispose of properly.

DISPOSAL OF PESTICIDES

Some pesticide containers may be re-used, but usually only with more of the original product. **Some empty containers may be disposed of in the regular trash or recycled,** with or without pre-rinsing; the label will have this information. **Other empty or non-refillable containers and those with product**

remaining in them should be taken to a household hazardous waste facility; once again, the label will tell you which type of container you've got. Residents of Charlottesville, Albemarle County and Scottsville can take advantage of the no-fee household hazardous waste collection days at the Ivy Material Utilization Center, generally scheduled for the last weekends of April and September each year. Source: Rivanna Solid Waste Authority, https://www.rivanna.org/hhw/ (at the website, you can sign up to receive email notifications about the Household Hazardous Waste days).

WHERE DO YOUR PESTICIDES GO FROM THE IVY LANDFILL?

Lest you wonder if items taken to the Ivy Landfill during the Household Hazardous Waste Days events end up unmanaged in a landfill anyway, your concerns can be dispelled. The Rivanna Solid Waste Authority, which oversees the Ivy site, has hired a licensed hazardous waste contractor which takes the material offsite, consolidates it at its facility in Abingdon, VA, then transports it to licensed hazardous waste incinerators, liquids to East Liverpool, OH and solids to El Dorado, TX.

ALL DONE!

So, NOW, clean-up is complete. You can kick back, put your feet up, peruse the seed catalogs and day-dream about next year's harvest.

Happy thoughts!

Sources:

[1] Sabry Elias, Adriel Garay, Bill Young and Tom Chastain. 2019. "Maintaining Grass Seed Viability in Storage. A brief review of management principles with emphasis on grass seeds stored in Oregon. Accessed October 7 at: https://seedlab.oregonstate.edu/training-education/publications/maintaining-grass-seed-viability-storage

[2]University of Massachusetts-Amherst. Center for Agriculture, Food and the Environment. 2019. Fertilizer Storage and Handling. Accessed October 7 at https://ag.umass.edu/greenhouse-floriculture/greenhouse-best-management-practices-bmp-manual/fertilizer-storage-handling

[3] U.S. EPA (U.S. Environmental Protection Agency). 2019. Pesticide Labeling Questions & Answers. Office of Pesticide Programs. Accessed October 7 at https://www.epa.gov/pesticide-labels/pesticide-labeling-questions-answers#misc

[4] Potter, Craig. 2019. Personal Communication. Vice President-Northeast, MXI Environmental, Abingdon, VA.

Aronias: Native Shrubs for Fall Color

By Cathy Caldwell | November 2019-Vol.5 No.11

Let me be frank. When I chose to write about aronia, I figured it would be a simple subject. It's a native shrub with brilliant fall color that's easy to grow and makes a good substitute for the ubiquitous and invasive burning bush, *Euonymus alatus*. End of story — or so I thought. But as it turns out, there's plenty more to know about *aronias* — from name confusions to reproductive mysteries to commercial berry production.

Let's start with the basics. ***Aronia* is a genus in the Rosaceae family, consisting of two species**:

- ***Aronia arbutifolia*,** commonly known as **red chokeberry,** and
- ***Aronia melanocarpa*,** commonly known as **black chokeberry.**

***Red chokeberry** (**Aronia arbutifolia**) at the US Botanic Garden*
Photo: US Botanic Garden

***Black chokeberry** (**Aronia melanocarpa**)*
Photo: US Botanic Garden

These two species are quite similar in most respects; they are deciduous, multi-stemmed, medium-sized shrubs with glossy green leaves and white flat-topped flowers in spring. Both species produce fruits, and if you want to be botanically correct, you call them *pomes,* not berries (despite the common name). If you're curious about the berry vs. pome distinction, you'll find answers at Classifying Fruit. The red chokeberry has bright red fruit that is not a first choice of birds and tends to remain on the branches through much of the winter, while the black chokeberry has purplish-black fruits that ripen earlier and don't last as long.

Black chokeberry (Aronia melanocarpa)
Photo courtesy of the Cranbrook Institute of Science, CC-BY-2.0.

Both are tolerant of a wide variety of soils and are found in both wet and dry areas. though the red chokeberry is more often found in moist areas. ***Aronia arbutifolia* is found primarily in the southeastern portion of the U.S.**, and is common in Virginia, Maryland, New Jersey, and the Carolinas. ***Aronia melanocarpa* is found primarily in the northeastern part of North America**, though both species are found in the Appalachian Mountains and parts of the Northeast.

Both species are easy to grow and to transplant. While both are shrubs with similar height and spread, the red chokeberry is a bit more erect and slender in habit and tends to be bare of leaves around the base of the plant. Both tend to colonize by suckering, so they are quite useful for erosion control. You can cut off the suckers to keep them in bounds.

Garden Uses

Aronias seem to demand massing, which will help disguise their bare spots, especially on the leggier red chokeberry. So you'll want to group them, preferably in full sun, which will yield more flowers, the brightest red fall foliage, and the most fruit. You'll still get fall color in partial shade, but it tends toward orange more than red. Because this shrub is easy to grow and free of major problems (well, the deer do like them), a number of horticulturists have suggested that the aronias are worthy of more garden use. In addition, both species are recommended for rain gardens by the Piedmont Virginia Native Plant Database, Albemarle.org/NativePlants, and for the margins of streams and ponds. In the wild, these plants are found in places as disparate as bogs and dry slopes. Talk about adaptable!

Aronia arbutifolia 'Brilliatissima' in a garden setting
Photo: Pat Breen, Oregon State University

One further growing note: aronia is **easy to propagate** by seed, softwood cuttings, and division of suckering colonies. So if you want to expand a few shrubs into a large mass, you can do so without even buying more plants.

What's it called again? Aronia or Photinia? Chokeberry or Chokecherry?

In a major turnabout from the norm, the chokeberries seem to have more scientific names than common names. For example, here's the list of **scientific synonyms for *Aronia melanocarpa***:

Aronia arbutifolia (L.) Pers. var. *nigra* (Willd.) Seymour
Aronia nigra (Willd.) Koehne
Photinia melanocarpa (Michx.) K.R. Robertson & Phipps.
Pyrus arbutifolia (L.) L. f. var. nigra Willd.
Pyrus melanocarpa (Michx.) Willd.
Sorbus melanocarpa (Michx.) Heynh.

Aronia arbutifolia (red chokeberry)

"The fact that it has been classified in four genera reflects its history of taxonomic difficulty," say Lois Berg Stack and Mark H. Brand, *extension.umaine.edu/aronia*. I don't know if it qualifies as a taxonomic difficulty, but the fact that the genus is classified as *Photinia* by some scientists certainly leads to confusion with the once-popular red-tip photinia (*Photinia fraseri)*, which, by the way, is NOT related to the

aronias. I experienced the confusion firsthand when I went looking for aronias in the Albemarle County Piedmont Native Plant Database. No aronias in the A-section? That was a puzzle; it's clearly a local native. But then I went looking in the P's and sure enough, there were the red and black chokeberries listed as *Photinia pyrifolia* and *Photinia melanocarpa*. But wait, there's more.

Photo: Mark H. Brand, University of Connecticut

In regions where both species of *Aronia* are present, they have hybridized to form *Aronia x prunifolia,* treated by some scientists as a new species, *Aronia prunifolia* and commonly called purple chokeberry. And how did this natural hybridization occur? It's all due to something called **agamospermy** (formation of viable seeds without cross pollination) with a possible role for **apomixis**. www.jstor.org/The Enigmatic Chokeberries. If you want to learn more about this mysterious process, you can read all about it in "Aronia: Native Shrub with Untapped Potential," Arnold Arboretum, arnoldia.arboretum.harvard.edu/pdf/article (2010).

There are other confusions, too. The common name chokeberry is easily confused with chokecherry, and yes, there is indeed a separate, unrelated plant known as **chokecherry**: *Prunus virginiana*. For more about this native, which has a number of similarities to the aronias, see the fact sheet at Va.Tech Dendrology. But we're not quite done; there's a *Prunus virginiana* var. *melanocarpa* — and its common name — I'm not making this up — is black chokecherry. As a couple of aronia experts drily put it, all of this "leads to confusion in commerce as well as in taxonomy." So keep your wits about you when you go shopping for aronia.

Are the fruits really edible?

There's a growing horticultural industry for the fruits of black chokeberry, so they must be edible, right? Well, not exactly. The taste is repeatedly described as astringent and bitter, so bad that those who try it tend to choke; hence, the name chokeberry. Despite the bad taste, the fruits are being grown for human consumption — in drinks, jams, jellies, wine, and other concoctions that disguise the taste. Why? Because black chokeberries are especially high in antioxidants, reportedly having more antioxidants than any other fruit grown in temperate regions.

Aronia melanocarpa berries
Photo: US Botanic Garden

Apparently the aronia berry industry originated in Russia and Eastern Europe as an effort to produce a local source of vitamin C. *Aronia melanocarpa* has been grown as a commercial berry crop in most Eastern European countries since the 1950s, and is "rapidly evolving" in the United States. Iowa St. Ext/Growing Aronia in Iowa. Aronia berries are one of the specialty crops being "trialed" at Maryland's Wye Research and Education Center, Extension/Univ.of Maryland/alternative crops.

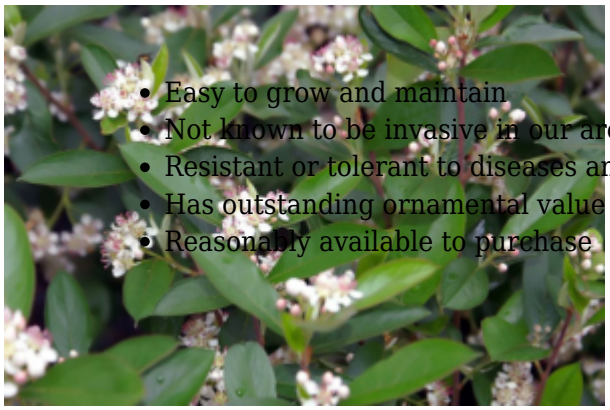
The black chokeberry — called "aronia berry" in this growing food industry — has been and continues to be the focus of a great deal of **research into its impact on various diseases,** and the results so far are looking good. Va.State & Va. Tech Coop. Ext."What's the Next Big Berry for Virginia? Aronia Berries (2013). Aronia berries are currently sold in frozen form by a number of online retailers. A search of the web revealed multiple sources for the plants that are best for growing your own berries, as well as many recipes for aronia berries, one of which is included in our Recipe of the Month, Aronia Berry Smoothie. So if you want an ornamental shrub with edible, healthful berries, consider the black chokeberry (*Aronia melanocarpa*).

Cultivars:

Before we get to cultivars, I should mention again the so-called "purple chokeberry," which is probably a "natural" hybrid of the two aronia species, though some argue that it is a separate species. Depending on your position on this taxonomy controversy, the purple chokeberry is known as either *Aronia* x *prunifolia* or *Aronia x floribunda* or *Aronia prunifolia*. This plant is an upright-rounded shrub with white flowers that mature to deep purple fruit. It grows to 12′ tall and wide and has bright red fall foliage.

Because of the boom in aronia berry growing, **cultivars of *Aronia melanocarpa* are more common**. An internet search revealed many online sources for these plants.

Aronia melanocarpa **'Autumn Magic'** is a cultivar developed by the University of British Columbia. 'Autumn Magic' has bright red and purple foliage in fall, and, in an improvement over the species, has a more compact habit. Perhaps that is why it has been named a Plant of Merit by the Missouri Botanical Garden.



Aronia melanocarpa 'Autumn Magic' at American Plant Food Co., Bethesda, Md.
Photo: David J. Stang

To be chosen for this honor, a plant must be

- Easy to grow and maintain
- Not known to be invasive in our area
- Resistant or tolerant to diseases and insects
- Has outstanding ornamental value
- Reasonably available to purchase

–Missouri Botanical Garden, http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/plants-of-merit.aspx.

Iroquois Beauty™ (*Aronia melanocarpa* 'Morton') is a cultivar developed by the Morton Arboretum, and it is more compact and has more flowers than the species. www.mortonarb.org/news/five-shrubs-plant-fall.

Other cultivars of black chokeberries favored for production of aronia berries, include 'McKenzie' (collected in the former Soviet Union and introduced by Natural Resources Conservation Service Plant Materials Center, Bismarck ND), 'Nero' (developed in Poland), and 'Viking' (developed in Finland, 1980). A couple of more **compact cultivars** of black chokeberries — "Low Scape Mound" and "Low Scape Hedger" were recently developed and patented by a horticulture professor at the University of Connecticut. UConn Today.

Aronia arbutifolia **'Brilliantissima'** is commonly grown by the nursery industry for its ornamental values. In this cultivar, all the desirable traits of the species have been heightened: it has more blooms and fruits, very glossy, dark green leaves, and intense red fall color. No wonder so many experts sing the praises of this cultivar, and encourage gardeners to use it as a native substitute for the invasive *Euonymus alata* (burning bush).

Speaking of burning bush, I recently got rid of mine. Will I miss the fall colors? Yes, but not the ridiculous number of seedlings that pop up all over in their vicinity. Now I'm on the lookout for aronias in local nurseries. They are usually available, though perhaps not this late in the season. Many online nurseries offer aronias for sale. And I just might try growing some black chokeberries for their fruits — *and* their fall colors.

Aronia arbutifolia 'Briliantissima'
Photo: Arb'Oretum (Director of the Arnold Arboretum, Harvard)(CC-BY-NC-SA-2.0)

SOURCES:

"Aronia: Native Shrubs with Untapped Potential," *Arnoldia,* Arnold Arboretum (Mark Brand, 2010), arnoldia.arboretum.harvard.edu

"*Aronia arbutifolia:* Red Chokeberry," University of Connecticut Plant Database, hort.uconn.edu/plants(Mark H. Brand)

https://landscapeplants.oregonstate.edu/plants/aronia-arbutifolia-brilliantissima

www.wildflower.org/Prunus virginiana var. melanocarpa

plants.ces.ncsu.edu/NorthCarolinaExtensionGardenerPlantToolbox/Aronia arbutifolia

Univ.ofMaine Agric.Extension/Aronia/black chokeberry

Univ.of Maryland Extension/Alternative Crops/Aronia

Agricultural Marketing Resource Center/Aronia Berries

"Aronia berries: Another superfruit for midwest growers?" Mich.State Extension (2016), www.canr.msu.edu/news

UConn Today/Horticulturist Wins Patents for Modified Black Chokeberry Cultivars

USDA/Natural Resources Conservation Service/Black Chokeberry

fairchildgarden.org/Classifying Fruit

Upcoming Events

By Susan Martin | November 2019-Vol.5 No.11

Piedmont Master Gardener Garden Basics: *Co-Existing with Wildlife in the Landscape* Saturday, November 16
2:00 – 4:00 p.m.
Trinity Episcopal Church, 1118 Preston Avenue
Charlottesville 22903 + Google Map

Find out how to attract beneficial wildlife and discourage trouble-makers. Preregistration is encouraged.
COST: FREE HOW TO REGISTER: Send your name and name of class to info@pmgarchives.com

Blue Ridge PRISM Invasive Plant Workshops
(Partnership for Regional Invasive Species Management)
November 14, November 23

Topics include: identifying invasive plants; when and how to treat; best seasonal practices for each invasive; using manual and mechanical control methods; controlling invasives with herbicides; planning a work schedule with best timings for multiple plants. There will also be an opportunity to identify plants, so bring samples of your mystery plants and we'll identify them!

Albemarle High School – Open Doors Program *** (no outdoor element)
Nov 14 (6:30 – 8:30 p.m.)
Register Here (cost $20)

Ivy Creek Natural Area in Charlottesville VA
November 23 (1:30 – 5:30 p.m.)
Register Here (cost $25)

Ivy Creek Foundation Pollinator Workshop
Saturday, November 9
9:30 a.m. – 2:00 p.m.
Ivy Creek Natural Area
1780 Earlysville Road, Charlottesville 22903

Interested in learning how to counter the pollinator decline? This workshop will help you learn to attract pollinators to your landscape. Presenters are Mary Lee Epps, Marilyn Smith and David Smith. Conference fee of $25-40 will include seeds to begin planting; a mason bee house to watch a variety of bees nest; and a plan to enhance your pollinator habitat. Space is limited, and registration is required. Register here.

Experience a Bird Walk at McIntire Botanical Garden
Saturday, November 9
8:00 a.m.

Join us for a morning walk through McIntire Botanical Garden to observe the migrating birds and those that call the Garden home. Joanne Bricker and Doug Rogers, former President of Monticello Bird Club, will lead the walks and share their knowledge with participants. All interest levels are welcome.

Limited to 20 participants each event. **Registration is required.** The hike is light to moderate on uneven

ground. Sturdy shoes are recommended. Meet at the Garden at the intersection of John Warner Parkway and Melbourne Road. **Reserve Your Walk Here**.

Virginia Native Plant Society Jefferson Chapter Meeting: *Drivers of Plant-Insect Interaction*
Wednesday, November 13
7:30-9:00 p.m.
Education Building at Ivy Creek Natural Area
1780 Earlysville Road, Charlottesville 22903

Melissa Hey is a PhD candidate in the University of Virginia's Department of Environmental Science. She has been working with Dr. Kyle Haynes' research team at Blandy Experimental Farm since 2015. Her research interests include invasion ecology and plant-insect interactions. Her undergraduate thesis focused on how intraspecific competition and herbivory affected growth and secondary chemical defenses in common milkweed. Common milkweed serves as a significant food source for the monarch butterfly, and her research sought to delve into drivers of plant-insect interactions**. Free**; all are welcome.

Ivy Creek Natural Area Monthly Plant Walk
Saturday, November 16
9:00 a.m.
Ivy Creek Natural Area
1780 Earlysville Rd., Charlottesville 22903

Jefferson Chapter member **Nancy Weiss** will lead a forest ecology walk. This will be an opportunity to learn more about how various tree, shrub, and herbaceous species in Ivy Creek's forests have changed over time. See how to read the influence of man and so imagine how the forest looked 80 years ago. **Free;** all are welcome. Co-sponsored by the Ivy Creek Natural Area. Meet by the kiosk near the parking lot.

Living with Nature at Wintergreen Hikes
3421 Wintergreen Drive, Roseland, VA 22967

Hikes are held on Saturday mornings from November 2-November 30 at 9:00 a.m. See the Nature Foundation at Wintergreen website for information on these hikes and others, plus other events. **Registration is required; fees apply.** Phone: 434-325-8169; Email: info@twnf.org

Aronia Berry Smoothie

By Cathy Caldwell | November 2019-Vol.5 No.11

There is growing evidence for the health benefits of consuming black chokeberries, which are referred to as "aronia berries" in the food industry (please note that it is only the black chokeberries — *Aronia melanocarpa* — that are being consumed). The "aronia berry" is the subject of much current research by food scientists, summarized in a recent article, Fruits of Black Chokeberry Aronia melanocarpa in the Prevention of Chronic Diseases. A quick check online revealed multiple sources for frozen aronia berries, and it seems likely that the berries will soon be appearing on your grocer's shelves — eventually in the produce section, but probably first in the frozen food section (note that research suggests that heat can reduce the high numbers of antioxidants normally present).

If you're eager to try aronia berries, here's a recipe that was presented on a local Maryland television show by a commerical horticulture specialist with the University of Maryland Extension, and it was recorded and is available in this video: Delmarva Life/Aronia Berry Benefits and Smoothie Recipe.

Courtesy of Delmarva Life, WBOC-TV, Salisbury, Maryland

Aronia Berry Smoothie Recipe

16 oz Almond milk
1 tablespoon brown sugar to sweeten
1 teaspoon vanilla
1/4 cup of thawed aronia fruit

Blend ingredients in a blender and serve.

November Tasks in the Ornamental Garden

By Cathy Caldwell | November 2019-Vol.5 No.11

There's a surprisingly long list of tasks for the month of November.

You can keep **planting new deciduous trees and shrubs** this month, at least until the ground freezes. Planting them during cool autumn weather allows them to become established before next summer's hot weather arrives. As long as the soil temperature is above 40°F, roots will continue to grow, and that root growth enables the tree to thrive and survive. Frankly, with the extreme heat and drought we've been experiencing in recent years, fall has become my main planting season. Please note that fall is not the ideal time for planting broadleaf evergreens.

Before you bring a tree or shrub home from the nursery, do some advance thinking and planning, and here's a good place to start: Planting a New Tree, The Garden Shed, Nov 2015. In order to choose the right tree for your site, consult Right Tree/Right Place List/C'ville Tree Stewards If you wish to plant on very compacted soil, you'll need to amend a large area (not just the planting hole), as directed in Univ.of Maryland Ext. Planting Process/Shrubs & Trees. There you'll also learn about the benefits and methods for creating "tree islands" for multiple trees.

Before you start digging a hole, **consult some expert tree-planting instructions,** such as those at Univ.of Maryland/Planting Process – Trees & Shrubs and Tree Planting Guide, C'ville Tree Stewards, The Charlottesville Tree Stewards recommend turning your tree into a "bare root" tree before planting, and they

have produced a video to show you how. Tree Planting Video/C'ville Tree Stewards If it's a balled and burlapped plant, you can read more at Univ.of Ky. Planting Balled and Burlapped Trees and Shrubs in your Landscape,

Or perhaps you'd like to watch a tree-planting video? In addition to the Tree Stewards video mentioned above, you'll find tree-planting videos at Planting a Container Grown Tree Video Univ.Md.Ext. or How to Plant a Tree in Your Landscape Univ.N.H.Ext..

Tree-planting video, Charlottesville Tree Stewards

As these publications and videos explain, it's very important to **dig a hole that is wider than the root ball** — most experts prescribe a hole that is at least **two to five times wider** than the diameter of the root ball but **no deeper** than the height of the root ball. Remove any wires, ropes, and non-biodegradable material from the root ball before back filling the hole, and if you've got a containerized plant, you'll need to deal with any circling roots. The received wisdom on circling roots has involved cutting them, but some authorities now suggest simply breaking a few and loosening them from the soil of the root ball, as demonstrated in the video mentioned above, Video: How to Plant a Container Grown Tree Do NOT add any soil amendments such as compost or peat moss to the planting hole because they encourage the roots to stay in the planting hole instead of growing outward. After you finish backfilling, apply about 1-2 inches of mulch over the site but don't let the mulch touch the trunk of the plant. Leave a 2" to 3" gap between the mulch and the trunk or stem. Water the plant well but not to the point that the soil becomes soggy. You'll need to keep watering regularly for a year to get your tree established.

Finish planting spring bulbs. VCE Publication 426-201, "Flowering Bulbs: Culture and Maintenance" recommends a planting depth of 2½ to 3 times the diameter of the bulb. In other words, if your bulb is 2" in diameter, plant it 5" to 6" deep (that's from the top of the soil to the bottom of the bulb). While some bulbs can tolerate some shade, most of them do best in a sunny site that drains well. Read all about it at Va.Coop.Ext. Flowering Bulbs.

Many trees and shrubs can still be transplanted this month. Smaller trees and shrubs can be transplanted when **dormant.** But unless you did some advance root-pruning six months ago, don't try transplanting larger trees and shrubs now. Tree and shrub roots normally grow well beyond the soil volume that can be moved; in established trees, the roots extend 50% beyond the drip line. To keep most of the roots within a small area, these **roots need to be pruned at least six months in advance of transplanting.** Ideally, root pruning is done in stages about 1-to-2 years before the plant is transplanted. Plants to be moved in the fall (October or November) should be root pruned in March, and those to be moved in spring (March) should be root pruned in October. Root prune only after leaves have fallen from deciduous plants in fall or before bud break in the spring. If not root pruned, the plant may die from transplant shock because of root loss.

If you intend to transplant a good-sized tree or shrub, you can certainly **do your initial root pruning now.**

Begin root pruning by marking a circle the size of the desired root ball around the tree or shrub. Then dig a trench just outside the circle. **For detailed instructions on both root pruning and transplanting,** I strongly recommend the detailed instructions at Clemson's Home & Garden Information Center, HGIC/Clemson.edu and at Univ.Md.Ext./Trees & Shrubs Planting Process.

There's still time to remove woody invasives using methods that apply a small amount of herbicide to a cut in the stem or trunk — the "hack and squirt" method and the "cut stump" method, for example. Late fall is actually a good time for these methods, according to the Blue Ridge PRISM, because

> "when actively growing, plants send nutrients and water upward, so an herbicide may not be moved down into the root system. **From late summer into late fall, movement is downward into the roots for winter storage, so herbicide applied at that time does an effective job."**

blueridgeprism.org/How-to-Control-Invasive-Plants-Effectively-and-Safely-with-Herbicides. For more about these methods and when they're effective, take a look at Southeast Exotic Pest Plant Council/Application Methods for Recommended Herbicide Treatments.

Paperwhite narcissus starting to bloom in time for the holidays.
Photo: Brianna Privett

If you'd like to enjoy **paperwhite narcissus and amaryllis** over the holidays — or give them as holiday gifts — now's the time to get started. Plant paperwhite bulbs, pointy side up, in soil or in water. In just a few days, roots will sprout, and in about 4 to 5 weeks, blooms will emerge. Plant around Thanksgiving for bloom at the holidays. Amaryllis is another bulb that can be started in November for holiday season bloom. On average, amaryllis will bloom about 6 to 8 weeks after planting. For detailed planting and care information, read The Garden Shed/Amaryllis .

It's not too late to apply fertilizer to your lawn, though it should be a **nitrogen-only fertilizer**. For cool-season grasses, the preferred time for applying N fertilizer is August through October. The second best time is late fall, mid-October to late November, when cool temperatures have reduced top growth, but root growth is still active. Low rates of N fertilizer (40 to 50 lbs./acre) will "set-up the plant" for winter and encourage healthy early-spring growth. Not only does enhanced root growth aid in the uptake of water and nutrients, carbohydrate buildup in the stem bases promotes winter survival and spring regrowth. Never apply lawn fertilizer to frozen soils. For warm-season grasses, the preferred period for applying N is mid-April through mid-August. For overseeded lawns only, a secondary period for applying a fall nitrogen application is mid-October to mid-November.

For recommendations on appropriate fertilization schedules and application rates, see the VCE publications, "Maintenance Calendar for Cool-Season Turfgrass Lawns in Virginia," at Va.Coop.Ext. Pub. No. 430-523and "Maintenance Calendar for Warm-Season Lawns in Virginia," Va.Coop.Ext. Pub.No.430-522.

Were you thinking about fertilizing trees and shrubs? Think again. Mature trees and shrubs

generally don't need fertilizing, and in any event, it's generally called for only if you're seeing symptoms of under-sized growth such as pale or small leaves, twig die-back, and the like. You'll need a soil test to determine if nutrients are needed. Also, you'll need to wait until the tree or shrub is dormant to apply fertilizer, which should be applied over as much of the root zone as possible, not concentrated around the stem or trunk. By the way, if you're fertilizing the lawn, **tree and shrub roots** that extend into the turf area absorb some of the fertilizer, and are therefore **indirectly fertilized.** For further information, see the VCE publication, Va.Coop.Ext. Fertilizing Landscape Trees & Shrubs.

You may want to review our previous tasks and tips articles, some of which cover additional tasks or provide additional details about November tasks in the ornamental garden.

Tasks & Tips Nov. 2015 (general yard tasks, tool maintenance)

Tasks & Tips Nov. 2016 (garden clean-up, mulching, winter care of tropicals)

Tasks & Tips Nov. 2017 (preparing the garden for winter) (houseplant care)

Tasks & Tips Nov. 2018 (winter prep for container plants; protecting trees & shrubs from mammals)

SOURCES:

Featured photo: by Piers Nye