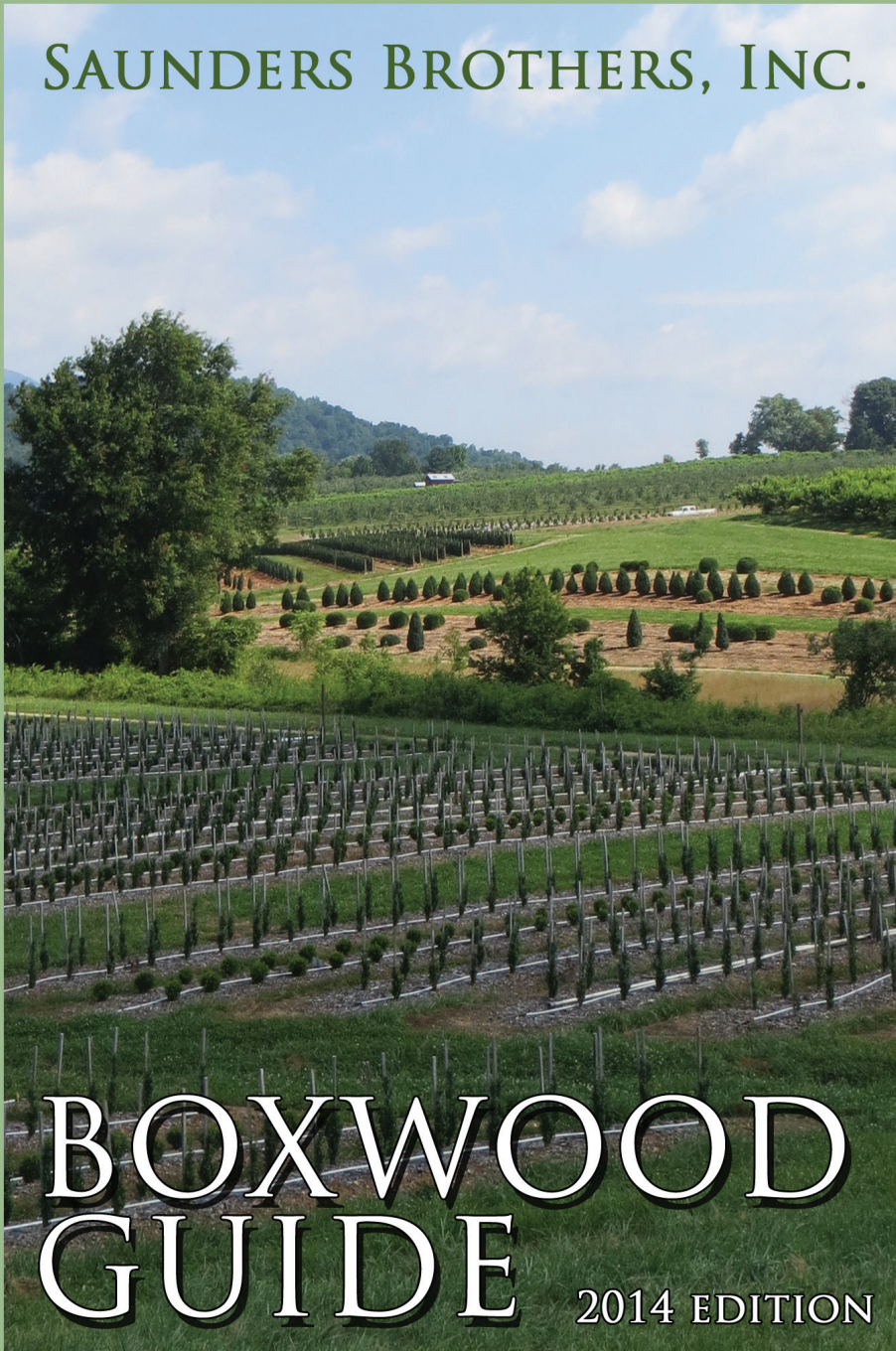


SAUNDERS BROTHERS, INC.



BOXWOOD GUIDE

2014 EDITION



Nestled in the foothills on the “Sunrise Side” of Virginia's Blue Ridge Mountains, Saunders Brothers, Inc. began in 1915 as a partnership between five brothers. Today, third generation brothers, Tom, Bennett, Jim, and Robert, with their dad, Paul, operate a wholesale nursery, orchard, and farm market. Our wholesale nursery operation now consists of approximately 100 acres of container production and over 100 acres of field production. We ship more than 1,000 products to garden centers, landscapers and re-wholesalers from the Mid-Atlantic states to New England. Our 160 acres of peach, apple, pear, and nectarine orchards provide fresh fruit for our Farm Market as well as wholesale markets along the east coast.



SAUNDERS
BROTHERS

SINCE 1915

Saunders Brothers
BOXWOOD GUIDE

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Boxwood, A Family Tradition



Paul Saunders (right) in early nursery.

Boxwood have long been part of the family tradition at Saunders Brothers, Inc. Paul Saunders' mother, Mildred, had a keen interest in boxwood. Upon moving to what would become the family home in the late 1930's, she began surrounding the home with boxwood. Many of those original plants still stand today. Then in the late spring of 1947, Paul propagated his first boxwood with the help of his mother and an inspiring science teacher. On a sticky clay bank near the present day container nursery, 25 of 77 cuttings took root and a nursery was born.

The nursery slowly expanded to the fertile river bottoms. Then on August 20, 1969, in less than 9 hours, Hurricane Camille dumped more than twenty inches of rain on Nelson County, Virginia. Nearly 10 acres of plants on the river bottom were destroyed. Only a few boxwood planted in containers on higher ground survived. With this nucleus, the container nursery was re-established.

The nursery continued to expand through the 70's and 80's with plants being grown in unheated greenhouses. The demand for larger boxwood in the late 90's led Saunders Brothers, Inc. to start growing plants in the field again. The container and field operations now cover about 200 acres in which we grow boxwood as well as several hundred other varieties of plants including annuals, flowering shrubs, evergreen shrubs, container trees, perennials, and roses. Boxwood, however, remain the signature plant and are grown in both containers and the field.

Why Boxwood?

Modern-day gardeners are rediscovering boxwood, the backbone of many landscapes and formal gardens for centuries. Boxwood are evergreen, drought-tolerant, and deer-resistant. Over the years, boxwood have fallen in and out of favor, but with increased deer browsing, water restrictions in our cities and suburbs, and the discovery of numerous new cultivars, boxwood are once again gaining popularity.

Boxwood are:

- deer-resistant
- drought-tolerant
- easy to maintain; most require little pruning
- versatile; many grow in both shade and sun
- long-lived; they offer permanence in the landscape
- multi-functional, thanks to their many shapes, sizes, colors, textures, and growth rates

Take a few moments to look at the wide variety of boxwood we offer ranging from upright accents to dwarf edging plants. This range of shapes and sizes means that gardeners can find a boxwood to fit almost every need. When combined with other herbaceous and woody plants, boxwood instantly add timeless elegance to any garden.



National Boxwood Trials

One of the exciting things we do at Saunders Brothers, Inc., is coordinate the National Boxwood Trials. This project began in the late 1990's when we realized that there was little information available comparing the performance of boxwood in varying climates and geographic locales.

Since its inception, 20 major botanical gardens, arboreta, and historical sites, 18 universities, colleges, and research stations, as well as 20 individuals and nurseries have participated in the project. The test sites are located from Connecticut to Chicago, and then south across the "boxwood belt" to Alabama and Georgia. Most recently we have added international contributors from the United Kingdom, Republic of Georgia, and the Ukraine.

Participants are asked to evaluate and rate approximately 24 different cultivars in their Trial gardens. Data is reported to the Trials coordinator at Saunders Brothers, Inc. where it is compiled and published. Analysis of this data allows the gardener to better identify "the good, the bad, and the ugly" in boxwood cultivars.

If you would like more information about the National Boxwood Trials or are interested in other literature, please contact Saunders Brothers, Inc., 2717 Tye Brook Highway, Piney River, VA, 22964 or 434-277-5455.



Boxwood Care

Boxwood are easy to maintain when properly planted and cared for. We recommend the following to increase your enjoyment of this timeless plant.

Planting and Site Selection

Proper planting is crucial to the longevity and health of boxwood. Take the steps outlined below to ensure planting success.

Cultivar selection Take care to select the proper cultivar of boxwood. Consider the boxwood's desired ultimate size, shape, and growth rate. Anticipate maintenance requirements, the sun exposure of the site, and the climate of the site.

Sun exposure Before choosing a boxwood cultivar for a specific location, consider the timing and intensity of sun in the area to be planted. All boxwood will do well in shady areas, while some of those same cultivars will also do well in sunny locations. Sunny locations are areas with bright sun from late morning to late afternoon. Part-sun locations are shaded from late morning to late afternoon but may receive direct sun early or late in the day. Shady locations typically receive no direct sun. Some cultivars of boxwood will bronze in winter more than others. To lessen winter bronzing, avoid direct afternoon sun. Refer to specific cultivars (pages 26-77) for recommendations with regard to exposure and winter bronzing due to sun exposure.

Drainage Consider drainage before selecting a site or planting a boxwood. When choosing a site, avoid areas that have poor drainage. Avoid any area with standing water or outlets for gutters or other drains. Some cultivars are more tolerant of areas with questionable drainage; however all boxwood will perform better in areas when the plant is elevated and drainage is addressed.

Digging the proper hole Dig the hole twice (or more) as wide as the root ball. Dig the hole so that about 1/4 of the root ball is above the original soil surface. Planting the boxwood high helps to ensure proper drainage. Never plant boxwood level with the soil surface. Take care when the soil has been disturbed below the root ball to ensure that the plant remains elevated and does not settle with time.

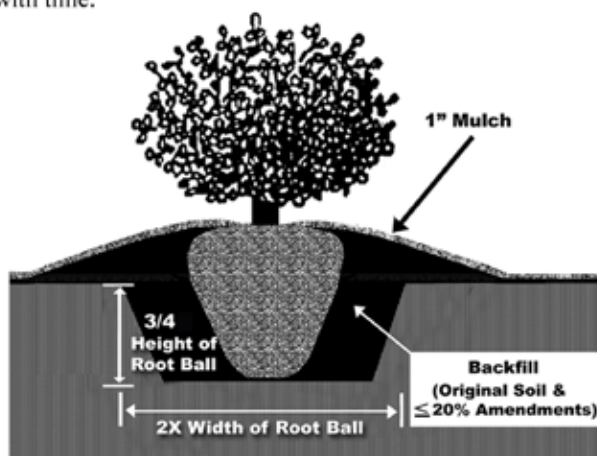
Soil preparation Proper soil preparation is essential to ensure long-term success with any planting. Take soil tests in advance of any bed preparation. Based on the results of the soil test, modify the soil to achieve a pH in the range of 6.5 to 7.2. Before planting in an existing bed or a new area, we recommend you renovate as much area as possible. This will improve drainage, reduce compaction issues, introduce new soil nutrients and organic matter, and encourage root growth.

Boxwood Care

(Soil preparation continued)

Renovations of existing areas or new plantings should include removal of unwanted existing plants and debris, the incorporation of soil amendments, and soil mixing. Turn soil to a minimum depth of 10-15 inches and add amendments. Examples of soil amendments include: compost to increase organic matter, gypsum to break up heavy clay soils, aged poultry litter for organic matter and nutrients, and limited amounts of peat moss. Mix soil and amendments thoroughly. Newly renovated soils should contain no more than 20% amendments. The amended soil should resemble the existing soil in order to encourage root growth beyond renovated areas. If an excess of amendments and new soil are added, the roots of the plant will often not venture beyond the new soil.

Planting Once you prepare the bed and dig a hole, place the plant in the hole remembering to keep about 1/4 of the root ball above the original soil surface. Backfill the hole with the amended soil. Mound the soil up to the edges of the root ball. Do not place soil on the base or trunk of the plant and ensure that the plant remains elevated and does not settle with time.



Watering A thorough soaking at the time of planting is the most important watering a boxwood will ever have. Afterwards, periodic waterings on an as-needed basis, are best. They allow the root zone to be thoroughly wetted then dry again before watering. It generally takes about 18 months for a boxwood to acclimate to a new site. During this time, monitor the plant weekly for adequate moisture. Never allow the plant to dry to the point of showing stress. When boxwood show stress due to lack of moisture, they seldom recover completely. (See *Irrigation on page 10 for more information*)

Boxwood Care

Mulching

Mulching a boxwood helps in many ways. Mulch retards weed growth, helps retain moisture in dry periods, decomposes to create additional organic matter, moderates soil temperature, and reduces erosion.

Maintain about one inch of mulch around a plant but never place mulch on the trunk of the boxwood. Re-mulch as needed every two years or so. Shredded hardwood mulch works well; in addition, composted leaves, pine needles, and pine bark make good mulches. These types of mulches are beneficial because with time they decompose and create organic matter. Take care to not use “green” or un-aged mulch as it requires extra nitrogen to begin breaking down and plants will often suffer due to the mulch stealing nitrogen from the plant. Some gardeners prefer stones or oyster shells as mulch but understand that they provide decreased benefits in regard to moderating soil temperature and moisture retention.

Transplanting

The best time to transplant boxwood in central Virginia is early September through mid-November. In your area, choose a time in the fall when summer heat has begun to subside and before severe cold sets in. Some gardeners have success transplanting during mild winters. Proper timing will allow for maximum root growth through the winter when moisture is typically more abundant and in turn better prepares the plant for dry seasons ahead. When feasible, the root ball should be dug at least as wide as the canopy of the plant. The root ball size will vary but a rule of thumb should be for every 3 feet in width, the depth should be 1 to 1 ½ feet. Boxwood have shallow roots so focus more on root ball width than depth. Never transplant boxwood during the stress of summer heat or severe drought. Water thoroughly before transplanting as well as immediately after planting and then monitor moisture for 18 months until the plant is established. Never allow the root ball to dry out when above ground or allow the plant to dry to the point of showing stress. Once drought-stressed, boxwood seldom recover completely.

Fertilization and Liming

Boxwood typically do not need a lot of fertilizer. Use soil tests to determine fertilizer needs as well as the pH of your soil. Boxwood thrive when the pH of a soil is between 6.5 and 7.2. A pH below 5.8 can cause problems in boxwood, especially in *Buxus sempervirens* ‘Suffruticosa’. The optimal time to fertilize is in late fall.

Boxwood Care

(Fertilization and Liming continued)

Boxwood roots grow the most in late fall, winter, and early spring when soil temperatures are more moderate. Late summer and early fall fertilization may cause a plant to initiate top growth that could be burned with early freezes.

Always place fertilizer near the drip line of the plant and never under the mulch. Boxwood typically have feeder roots just under the soil surface. Placing fertilizer directly on those roots can cause damage to the plant. The American Boxwood Society recommends using fertilizer with a formulation of 10-6-4. Saunders Brothers, Inc. has had good results using aged poultry manure in low rates both at the time of planting and as needed for the life of the plant. Bagged cow manure has also been proven beneficial by many gardeners as a source of fertilizer as well as organic matter.

Pruning

Proper pruning techniques are crucial to long-term success with boxwood. Pruning techniques differ with each cultivar. It is important to choose the correct cultivar for the desired use and location to avoid the need for excessive pruning.

The best time to prune boxwood is in the late winter to early spring before the plant breaks dormancy. This is usually March in central Virginia. This minimizes the time between pruning and new growth as well as stimulates a strong spring flush. Summer and early fall prunings may stimulate late fall growth that could be burned by early winter freezes. Early winter pruning, while not detrimental, leaves pruning scars on the plant until the spring flush is initiated.

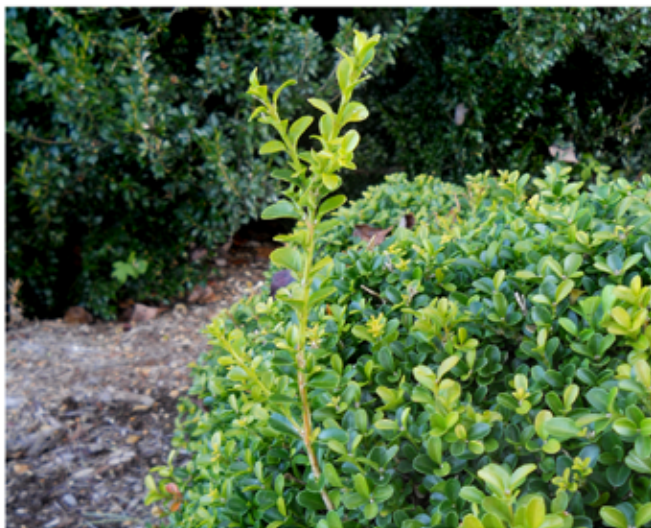
In general, any pruning that increases the airflow in a boxwood is advantageous. Cultivars that are more dwarf or have very tight habits benefit from an annual thinning to increase air flow and sunlight penetration to the interior of the plant. Thinning is typically done by reaching into the plant and breaking or cutting out branches with hand pruners. These branches can be 6-10 inches long on larger cultivars, or only a couple of inches on a dwarf cultivar. This will leave pockets or holes in the plant for air and sunlight penetration. Using hand pruners will result in a cleaner cut and lessen the possibility of disease introduction. Not all cultivars require annual thinning; however those that benefit the most from thinning are noted in the cultivar section of the Boxwood Guide. Typically, cultivars that are sheared regularly will benefit from thinning.

Boxwood Care

(Pruning continued)

Larger and more vigorous cultivars are generally tolerant of shearing or more radical pruning techniques. Use loppers or shears to drastically reduce overall plant size on vigorous plants, taking care to leave one-half to two-thirds of the foliage undisturbed. This foliage will produce energy the plant needs to recover. Plants that require more drastic pruning may need to be pruned over several years to reduce the overall size in steps and not jeopardize the plant's health. If a Buxus 'Suffruticosa' (English) overgrows its intended space, use loppers to ensure clean cuts on large branches. The plant should develop new foliage along the bare stems. Full recovery may take several seasons. You should never use shears on English boxwood. Using shears increases the density of the canopy of the plant long-term as well as shatters brittle limbs thus increasing the chance of disease. To minimize radical pruning, do not select large cultivars for applications where small plants would be more suitable. See specific notes in the cultivar section of the Boxwood Guide on boxwood pruning.

Some dwarf cultivars including 'Green Pillow', 'Grace H. Phillips', 'Morris Dwarf', and 'Morris Midget' will occasionally sport or send up a branch of foliage that is very vigorous compared to the rest of the plant. Remove the sport by cutting into the plant below the point where the sport appeared. Sports on plants do not hurt the plant, but they can be unsightly. Some boxwood enthusiasts will propagate sports in hopes of finding a new desirable cultivar.



Sport on 'Green Pillow'

Boxwood Care

Irrigation

Boxwood are drought tolerant once established. The best irrigation systems are designed to water boxwood only until they are established and then only occasionally in times of severe drought. After this point, boxwood need minimal irrigation. Too much water is often more harmful than not enough water. Avoid watering daily and or methods of irrigation that keep the foliage wet for long periods of time.

New plantings should receive deep waterings about once a week for the first 3-6 months. Always monitor soil moisture before irrigating. Boxwood will do best when they are watered thoroughly by wetting the root zone to a depth of 12 to 18 inches. The root zone should then be allowed to dry before the next application of water. Timing of subsequent waterings will be dependent on rainfall and soil conditions. Allowing the soil to dry between applications encourages stronger root systems as plants are forced to search for water. Avoid allowing the plant to dry to the point of showing stress as they may have difficulty recovering. The first 18 months after planting are the most critical for irrigation.

Established plantings over 18 months old require supplemental water only in times of extreme drought. A good rule of thumb is: If there is adequate rainfall that your lawn needs to be mowed, your boxwood should be fine.

Simple drip irrigation systems installed just under the mulch work well for boxwood. They allow for slow application of water through the root zone area. Lawn irrigation systems should be designed and maintained to avoid daily application of water onto the foliage of boxwood.

Avoid over-watering boxwood. Some cultivars, especially *Buxus sempervirens* (American), 'Suffruticosa' (English), 'Jensen', 'Elegantissima', 'Vardar Valley', 'Justin Brouwers', and other *sempervirens* cultivars, are susceptible to root rot resulting from continuously wet or soggy soil conditions or poorly-drained soils. Remember, roots need air as well as water.

Cultivation

Avoid cultivating near the roots of boxwood. Boxwood roots are shallow and widely spread. Cultivating near the drip line of the plant creates problems in boxwood. This is especially evident when boxwood are used as edging in a bed. For example, if one side of the plant is restricted in horizontal root growth by a "hard edge" like a sidewalk or manufactured edging, and the opposite side is tilled 1-2 times a year for planting annuals, severing the roots repeatedly will cause long term problems and potentially kill the plant.

If you need to cultivate where there is a "hard edge" on one side of a boxwood planting, stay about one foot from the drip line of the plant. When the side opposite of cultivation is not restricting horizontal root growth, you may cultivate slightly closer.

Boxwood Care

Winter and Cold Damage

Occasionally boxwood will be damaged by late fall freezes, extreme winter cold or late spring freezes. Damage can be as minimal as a few bronzed or desiccated leaves, to broken and dead plants. Most of the boxwood listed in the Boxwood Guide are hardy to Zone 5 or 6. Refer to the individual cultivars for specific hardiness information.

If a late fall freeze damages any new growth, prune off unsightly branch tips. Do not do this until after the first freeze or two of winter. Otherwise, wait until late winter or early spring to prune. Additionally, we have seen bark splitting near the ground level of some boxwood. This typically happens to boxwood that have bare trunks and are exposed to the southwestern sun. Bark splitting is most common in *Buxus sempervirens* 'Suffruticosa' (English).

To minimize root damage due to extreme cold, newly-planted boxwood should be deeply watered before the roots freeze. Filling the air space around the root system with water helps to insulate the plant. Boxwood in containers are especially at risk of winter damage when they are not watered well.

Foliage bronzing in the winter can be attributed to sun exposure and cultivar selection. Direct sun in the winter (especially from the southwest) will tend to bronze some cultivars more than others. Bronzed leaves typically begin greening up in the spring as temperatures begin to rise and as new foliage covers them. Intense sun on shade-loving cultivars will cause bronzing that does not recover quickly in spring and can cause long term problems. If you want to minimize bronzing, take care to avoid southwest exposures and consider your varietal selection. Good choices would include 'Green Beauty', 'Jim Stauffer', 'Dee Runk', 'Vardar Valley', 'Fastigiata', 'Justin Brouwers', and sempervirens (American). The "Green Series" ('Green Velvet', 'Green Mountain', 'Green Mound', 'Green Gem') as well as some of the dwarf cultivars of boxwood tend to bronze in winter sun. Refer to the cultivar section of the Boxwood Guide for more information.

In snowy conditions, it is best to leave the plants alone and let the snow melt on its own. However, when there is chance of breakage, gradually remove the snow by gently brushing the limbs in a manner to minimize the breaking of branches. Remember: if branches are frozen, beating them will cause damage to the limb and bark, and will encourage the introduction of disease. Many of the microphylla cultivars are rigid and will hold snow with minimal to no damage. In heavy ice storms, leave the ice on the plants to melt naturally. Diseases will often wait for conducive conditions before invading the damaged plants, a process that can take six months to a year or more.

Boxwood Care

(Winter and Cold Damage continued)

Occasionally in late spring after new growth has begun to emerge, an early morning frost will damage the new growth on a boxwood. Pruning off affected foliage is not necessary as the plant will typically regenerate on its own. In most cases a secondary flush will begin within days and cover any burned foliage.

Boxwood in Containers

Boxwood are an excellent choice to use in a container. Cultivars that are suitable for containers are listed in the cultivar section of the Boxwood Guide under Uses. When planting in a container, take care to select a container that is larger than the root ball of your chosen plant. If you allow space for the roots to grow, the boxwood will have a longer life in the container. Use an artificial potting medium to fill around the root ball. Be sure the container has drainage holes in the bottom.

After several years it may be necessary to remove the plant from the pot to re-invigorate it. Cut and loosen the roots, and replace much of the soil in order to stimulate new root growth on the plant before placing it in the same or a larger container. When the roots stop growing, a plant typically will begin to deteriorate. Fertilize lightly annually or biannually with well balanced fertilizer that does not drive down the soil pH (see Fertilization, page 7).

Although boxwood are more drought-tolerant than many plants, be sure to provide adequate water throughout the entire year, including the winter. In winter it is very important that the plant is well-watered before extreme cold spells. Filling the air space around the root system with water helps to insulate the plant. In summer, water about once a week. Regularly monitor water and keep roots moist but not wet.



Boxwood Care

Boxwood Propagation

Boxwood is a simple plant to propagate. Propagation procedures differ with every nursery and gardener. Typical cutting propagation occurs in late June after the spring flush has had time to harden off, through early October. Do not propagate too late into the fall or winter, unless artificial bottom heat is available, as the cuttings need soil temperatures in the low 70's to begin rooting. Make cuttings 4-6 inches long and remove one-third to one-half of the foliage. Apply a rooting hormone to the bottom of the cutting before it is stuck in the rooting bed.

Rooting bed media is typically a combination of sand and peat moss. Cuttings should be shaded from any direct sun until rooted. Keep the foliage moderately moist until roots develop to increase rooting success. Do not attempt to propagate boxwood from mid-March through early June as the energy of the plant is being directed into producing new top growth.

Many gardeners use layering to propagate boxwood. The natural weight of limbs or snow can push a branch down so that it touches the ground. The portion touching the ground will root into the soil. After a period of time, the branch can be cut from the parent plant and moved. Other gardeners, typically in the spring, will bend a side branch of a plant down to the soil and lay a brick or rock on top of it. In the fall or the following spring, the plant can be cut from the parent plant and planted elsewhere.



Boxwood Pests

In this section we will discuss the three primary pests of boxwood. To be a successful boxwood gardener one must be aware of boxwood leafminer, psyllid, and mites. All are controllable. Below we list information on these pests including cultivar susceptibility as well as control options.

Boxwood Leafminer

The primary pest of boxwood in the Mid-Atlantic area is the boxwood leafminer. Over a period of several years, a lightly infested plant can become discolored, brown, and even defoliated. We have seen severe leafminer populations kill boxwood. The good news about boxwood leafminer is that there are effective control options and those options are simplified because there is only one generation of the pest produced per year.

The life cycle of the boxwood leafminer begins in late spring to early summer. To the naked eye, the adult leafminer appears to be an orange mosquito. The adults are weak flyers and generally hover within inches of the boxwood after hatching because any wind will blow them away. The adults mate and then the female lays eggs in the tender new growth of the boxwood. The eggs hatch sometime in early summer, around June 20 in central Virginia. The larvae begin a 9-10 month cycle during which they feed and live inside the leaf causing it to blister. The blistering is most evident in early spring of the following year. Depending on the degree of infestation, a leaf can have as many as 5 or more larvae per leaf. In spring, the larvae soon turn into pupae, and around late April or early May the flying adults emerge and begin a new cycle.



Blistering leaves in late winter



Larvae in early spring

Saunders Brothers, Inc. has done extensive work trying to determine what chemical controls are best for boxwood leafminer and the most effective timing of those chemical applications. We have found it difficult to time a chemical application to kill leafminer adults.

Boxwood Pests

Boxwood Leafminer (cont)

As discussed on the previous page, the life cycle is short, perhaps only a few days in some cases. Since you would have to spray every 2 or 3 days over a 2 week period, we think this control strategy is futile.

The best control method would be a systemic insecticide applied just after the eggs hatch, around mid to late June in central Virginia. Since the larvae are alive, eating, and growing all during the summer and fall, we have found these systemic insecticides to be effective until temperatures turn cold, which in some years is not until Thanksgiving. When these chemicals are applied properly and thoroughly to all boxwood in a given area, you can expect control for up to 2-3 years, because you kill nearly the entire population and it takes several years to bring that population back up to noticeable levels.

The best products we have tried are those that contain the active ingredient *imidacloprid*, *thiomethoxam*, or *dinotefuran*. Saunders Brothers, Inc. can relate only our experiences. We advise any nurseryman or homeowner to contact a local full-service garden center or Extension personnel for recommendations. With any pesticide, read and follow the label.

Another strategy that Saunders Brothers, Inc. is exploring is finding varieties that are resistant to boxwood leafminer. We have experimented with about 85 varieties over the years and have found moderate to good resistance in some cultivars. We continue to research new varieties and attempt to understand why some cultivars are more susceptible than other. Based on tests at Saunders Brothers, Inc., relative susceptibilities of cultivars listed in this Boxwood Guide are shown below.

Resistant*	Moderately Resistant*	Least Resistant*
'Franklin's Gem'	'Dee Runk'	'Chicagoland Green [®] '
'Grace H. Phillips'	'Elegantissima'	'Green Beauty'
'Golden Dream'	'Fastigiata'	'Green Gem'
'Green Pillow'	'Jensen'	'Green Mound'
<i>insularis</i> 'Nana'	'Jim Stauffer'	'Green Mountain'
'Morris Dwarf'	'Morris Midget'	'Green Velvet'
'Suffruticosa'	'Rotundifolia'	'John Baldwin'
'Vardar Valley'	<i>sempervirens</i>	'Justin Brouwers'
'Winter Gem'		
'Wintergreen'		

*Based on testing at Saunders Brothers, Inc. 2009-2012.

The astute gardener should take into account many factors when choosing a boxwood cultivar for a particular application including varietal susceptibility if neighboring landscapes have high populations of leafminer or if he desires to minimize control measures.

Boxwood Pests

Boxwood Psyllid

Boxwood psyllid occur wherever boxwood are found. There is only one life cycle per year and the nymph emerges in mid April or as new growth starts in the spring. The nymph lives for about 2 months chewing on the new foliage resulting on the upward cupping of the leaves.

The cupping of the leaf protects the feeding psyllid. A sticky white deposit is often left on the foliage by the psyllid. Minor damage is mainly aesthetic but heavy infestations can eventually cause some defoliation. The winged adult typically appears in June. After mating, the female flies over the canopy of the plant and then lays her eggs under the bud scales of the plant. The eggs remain there until the following spring when they hatch. Control measures, if desired, should be taken immediately after new boxwood buds break dormancy. Once the psyllid has cupped the leaf, the pest may be controlled but damage to the leaf cannot be corrected. Use insecticidal soap, horticultural oil, and other insecticides to control the nymphs. Consult your local full-service garden center or Extension personnel for recommendations for control of psyllid.



Psyllid Damage

Mites

The boxwood mite is a spider mite. Mites generally begin hatching in late April to May and become most active in hot, dry summers. A typical mite has a life span of 1 to 3 weeks; thus in hot, dry summers there are many generations of this pest.

The boxwood mite is very small and difficult to see with the naked eye. Gently hitting a branch over a piece of white paper will often allow you to see the mites when they fall onto the paper. Mite-damaged leaves appear to have tiny creamy-white spots and marks on them. Damage is often superficial but can become a problem if the mite population becomes too great.



Mite Damage

Boxwood Pests

Mites (continued)

Control measures include natural predators and the use of horticultural oils, insecticidal soaps, and other chemicals. Consult your local full-service garden center or Extension personnel for recommendations. Unfortunately, some of the insecticides used for control of boxwood leafminer seem to cause an increase in mite populations because they kill predators of the mites. There appear to be some cultivars that are more resistant than others to boxwood mites. *Microphylla* cultivars seem to be more resistant, while some *sempervirens* cultivars seem to be more susceptible.



Wildlife

Boxwood are deer-resistant. Very few cases of deer browsing have ever been reported to Saunders Brothers, Inc.

Pets and Boxwood Odor

Dog urine will kill boxwood branches. *Buxus sempervirens* cultivars are the favorite targets of dogs.

Some boxwood cultivars exhibit a strong odor in early summer when the sun shines directly on them, especially when the humidity is high, particularly *Buxus sempervirens* 'Suffruticosa'. Some people believe this may be what attracts dogs. Some gardeners relish the aroma of boxwood while others say it smells like cat urine. Fortunately for some and unfortunately for others, this is the odor of boxwood and it is more intense with some cultivars than others and cannot be controlled.

Boxwood Diseases

Boxwood tend to be very disease resistant. In most instances, proper planting techniques, site selection, maintenance, and smart gardening will lessen disease occurrence and severity. There are several diseases that typically infect boxwood. In the Boxwood Guide we will discuss three of the most common: phytophthora, volutella, and cylindrocladium.

Phytophthora

Phytophthora nicotianae is also called root rot. It is a disease that is found most commonly in heavy, poorly drained soils. It weakens the plant and will eventually kill it. Usually the first indication is when it appears the plant has stopped growing. The foliage turns to light green, then to brown, and finally to a straw color. This progression can take several months to a year or longer. *Phytophthora* will often selectively kill a branch or a section of the plant at a time. When a plant with *phytophthora* is dug up, the ends of the roots will pull off much like pulling the sheath off a knife. Roots will be brown and stringy instead of a healthy white or tan color.



When cultivars struggle with drainage and early stages of *phytophthora*, their foliage will begin to fade with a yellowish tint or lime-colored tint. If the drainage issues are addressed quickly or the plant is moved or elevated, it can sometimes fight off the fungus and return to a healthy green color.

Phytophthora is difficult to treat once it is visibly present in a plant but you can usually avoid the disease with good gardening practices. Purchase disease-free plants from reputable suppliers. Avoid areas where poor drainage is an issue. Use proper planting techniques to maximize drainage around the plant.

Some cultivars appear to be less sensitive to *phytophthora*, including many of the microphylla cultivars. Many of the *sempervirens* cultivars seem to be more susceptible. 'Vardar Valley', 'Jensen', *sempervirens* (American), 'Suffruticosa' (English), 'Elegantissima', and 'Justin Brouwers' are especially susceptible when planted in poorly drained soils.

Boxwood Diseases

Volutella

Volutella buxi or stem blight is a fungus characterized by foliage that will turn bronze, then red, then yellow. Damage looks very similar to winter burn but the plant will not recover with the spring flush of growth. Cankers will form on the branch, and the bark will typically break and fall or peel off the stem. It normally affects one limb at a time. *Volutella* is often a secondary infection after something has weakened or injured a plant. It is most prominent in times of high humidity and poor air movement. *Buxus sempervirens* 'Suffruticosa' (English) is prone to *volutella* due to its very dense habit.



Avoiding conditions that are conducive to *volutella* is the best means to control it. Boxwood are more susceptible to *volutella* when they are under stress, in poor environmental conditions, or suffering from winter injury. Avoid overhead irrigation, maintain proper drainage, and thin plants to maximize air movement within the plant. *Volutella* often invades plants that have had winter damage such as heavy snow loads that injured the bark. Sometimes *volutella* may take a summer or two to invade a damaged plant as it awaits optimum conditions of high humidity and low air movement.

When *volutella* is present, prune infected limbs several inches below cankers or broken bark. There are some fungicides available on the market but as mentioned above, proper care and culture are the best way to avoid the disease.

Cylindrocladium buxicola

The disease boxwood blight or box blight is caused by the fungal pathogen *Cylindrocladium buxicola* (also known as *Calonectria pseudonaviculata*). Boxwood blight was officially documented in the United States in late 2011. It was found in Europe in the late 1990's. Understanding boxwood blight is a high priority among research facilities in both Europe and the United States. Boxwood blight is a fungus that attacks the foliage of boxwood. It first appears as black or chocolate-colored spots on foliage. In a few days, those spots will develop yellow to brown rings around them and cover the leaf. Infected leaves fall off the plant in a matter of a week or so. Stems near infected leaves will have streaking black stem lesions or cankers.

Boxwood Diseases

Cylindrocladium buxicola (continued)

Boxwood blight is most prominent in times when foliage is continually wet from constant irrigation, prolonged rain, or high humidity, and the temperatures are in the high 60's to low 70's or higher. When optimal conditions exist and the fungus is present, it will move quickly. When conditions are not conducive, it will subside. The fungus will lie dormant in infected foliage and stems for long periods of time (5-10 years) and reappear when conditions are conducive. The boxwood blight spore is a sticky spore that moves from plant to plant by several means including water splash, pruning equipment, clothing, animals such as dogs or wildlife, or other contact. It is not known to be moved by wind except in driving rain.



Like many of the diseases boxwood are subject to, boxwood blight is best avoided with good cultural and care practices. Purchase healthy plants from reputable suppliers. Educate yourself about the disease to minimize its movement on clothing, equipment and plant debris. Maintain good air flow in and around boxwood, avoid overhead irrigation whenever possible, and properly select cultivars for each application based on ultimate desired size and shape to avoid over-pruning. If heavy shearing is necessary for the desired application, care should be taken to annually thin the plant to allow air penetration into the plant.

Boxwood blight research is producing a large amount of valuable information. While all boxwood have some susceptibility to boxwood blight, *Buxus sempervirens* 'Suffruticosa' is the most susceptible cultivar. We have learned there is some boxwood blight resistance in boxwood cultivars, particularly the microphylla and several other cultivars. Plant architecture, with exceptions, seems to influence susceptibility. More open, taller plants tend to be more resistant while short, compact cultivars seem to be more susceptible. A great deal of research is ongoing to identify additional cultivars that will be resistant to boxwood blight by ascertaining the shapes and sizes that are naturally more susceptible.

Boxwood Diseases

Cylindrocladium buxicola (continued)

Based on early testing of the G1 genotype of boxwood blight, we have listed the relative susceptibilities of some of the cultivars listed in this Boxwood Guide.

Most Resistant**

'Dee Runk'
'Fastigiata'
'Franklin's Gem'
'Golden Dream'
'Green Beauty'
'Green Gem'
insularis 'Nana'
'John Baldwin'
'Winter Gem'

Moderately Resistant**

'Grace H. Phillips'
'Green Mound'
'Green Mountain'
'Green Pillow'
'Green Velvet'
'Jim Stauffer'
'Rotundifolia'

Least Resistant**

'Chicagoland Green'
'Elegantissima'
'Jensen'
'Justin Brouwers'
'Morris Dwarf'
'Morris Midget'
sempervirens
'Suffruticosa'

**This is early 2013 data and subject to change.

If you suspect boxwood blight, carefully remove an infected branch, place it in a ziplock bag, and take it to the local Extension office to be sent to a lab for testing. Take care to not allow the debris to fall on other boxwood. If blight is confirmed, follow lab or Extension service recommendations for removal and cleanup of the infected plants and debris.

Although chemical tests for prevention and control of boxwood blight are being conducted, making chemical recommendations would be premature. Research is very new and ongoing at the time of the publication of the Boxwood Guide. Consult your local full-service garden center or contact your local Extension office for the latest updates. We are all learning more about this disease on a daily basis.



Using the Boxwood Guide

We have prepared the Boxwood Guide so you can quickly find the most appropriate boxwood for your particular design needs and site conditions. When consulting the Boxwood Guide, please keep in mind the following:

Zone

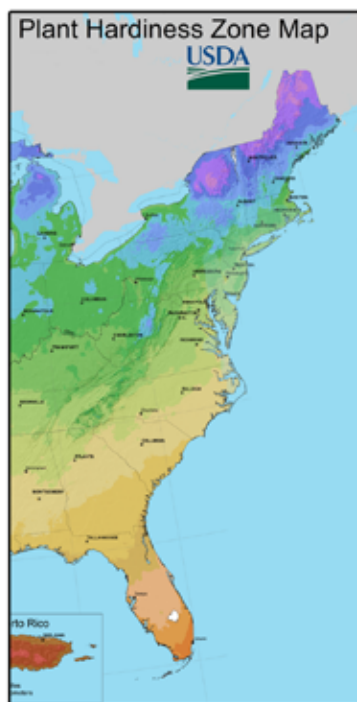
Included below is the USDA Plant Hardiness Zone Map for the entire United States. This map is also readily available on the Internet or in most horticultural reference books. Please refer to it to be sure you choose the proper plant for your particular zone. Each boxwood cultivar is listed with the zones which the plant is known to do well in.

Based on Average Annual Minimum Temperature

- Zone 4 (-30F to -20F)
- Zone 5 (-20F to -10F)
- Zone 6 (-10F to 0F)
- Zone 7 (0F to 10F)
- Zone 8 (10F to 20F)

A full version of the USDA Plant Hardiness Zone Map is available at their website:

www.planthardiness.ars.usda.gov



Temp (F)	Zone	Temp (C)
40 to 45	1a	-41.1 to -48.3
35 to 40	1b	-48.3 to -45.6
30 to 40	2a	-45.6 to -42.8
25 to 40	2b	-42.8 to -40
20 to 35	3a	-40 to -37.2
15 to 30	3b	-37.2 to -34.4
10 to 25	4a	-34.4 to -31.7
5 to 20	4b	-31.7 to -28.9
0 to 15	5a	-28.9 to -26.1
-5 to 10	5b	-26.1 to -23.3
-10 to 5	6a	-23.3 to -20.6
-5 to 0	6b	-20.6 to -17.8
0 to 5	7a	-17.8 to -15
5 to 10	7b	-15 to -12.2
10 to 15	8a	-12.2 to -9.4
15 to 20	8b	-9.4 to -6.7
20 to 25	9a	-6.7 to -3.9
25 to 30	9b	-3.9 to -1.1
30 to 35	10a	-1.1 to 1.7
35 to 40	10b	1.7 to 4.4
40 to 45	11a	4.4 to 7.2
45 to 50	11b	7.2 to 10
50 to 55	12a	10 to 12.8
55 to 60	12b	12.8 to 15.6
60 to 65	13a	15.6 to 18.3
65 to 70	13b	18.3 to 21.1

Growth Rate

This is an average growth rate and could vary depending on the soil, weather, location, and individual gardening practices of your particular site. This tool allows the gardener the ability to compare cultivars on a similar scale.

Using the Boxwood Guide

Sun Exposure

Each cultivar is listed with Saunders Brothers, Inc.'s recommendations regarding sun exposure.

- Sun (Location is sunny from late morning to late afternoon)
- Part Sun (Location is shaded primarily from late morning to late afternoon)
- Shade (Location has no direct sun)

Attributes

This section describes the cultivar including pertinent information on foliage, growth, and shape.

Care

Here we make recommendations on how to care for each cultivar including pertinent information on pests or diseases. The pruning comments include which boxwood can be sheared or thinned and which should not, as well as which cultivars need annual pruning. Remember that care methods continually change with site, weather, and individual gardening practices.

Comments

In this section we offer additional comments from a Saunders Brothers, Inc. point of view.

Uses

This section makes suggestions for possible uses of the boxwood cultivar in the landscape. The gardener must consider characteristics before selecting the appropriate boxwood for his or her needs. Remember, each location and use is unique. Consult other gardeners to see what cultivars are most successful in your area.

Uses listed include:

- A **Specimen** is a plant grown individually in a lawn or garden for ornamental effect rather than being used as part of a group or mass. Specimens serve as focal points in the landscape. An example of a specimen plant is a flowering tree in a prominent spot on a lawn.
 - Specimen Tall (mature size of 6' tall or greater)
 - Specimen Medium (mature size of 3-5' tall and wide)
 - Specimen Small (mature size of 1-3'tall and wide)

Using the Boxwood Guide

- An **Allée** is a tall, straight line of shrubs or trees running along both sides of a walk or road. The plants are typically of the same species or cultivar. An allée (often called an “avenue”) is used to announce the arrival to a garden or other architectural feature.
- A **Hedge** is a wall of plants. Hedges vary in height depending on the use. They can be planted to provide privacy, be decorative, or delineate a space. Take proper care to choose the correct plant based on the desired look of the hedge. Hedges can range from tightly clipped to an unclipped, more natural look. If a highly-manicured look is desired, be sure to select a plant that is responsive to pruning.
 - Tall Hedge (mature size of 8-12’ tall)
 - Medium Hedge (mature size of 4-8’ tall)
 - Low Hedge (mature size of 4’ or less)
- **Foundation** plants are typically used around the base of a home. Their functions include: transitioning from lawn to the home, softening hard lines around corners of the home, and beautifying an entrance.
- **Edging** (maximum mature size of 2’ high or wide) plants are used to create a low, straight or ribbon-like border along a walkway, lawn, or garden. When creating an edge, take care to select plants with smaller ultimate sizes. Edging is typically clipped very tightly, so select a plant that responds well to shearing. When shearing, the plant should be shaped slightly broader at the base than at the top to allow light to contact the plant more uniformly. If the gardener prefers a more natural look, plant selection should focus on varieties that have smaller ultimate sizes similar to the desired final size. Note comments on thinning each cultivar.
- A **Parterre** is a formal garden with tightly clipped edges. Plants are typically laid out in a very symmetrical pattern. The interior of the parterre can be planted with a variety of plants including evergreen shrubs, annuals, herbs, or perennials. A knot garden is similar to a parterre garden but has a distinctly woven pattern. Plant selection in a parterre or knot garden should focus on varieties that have smaller mature sizes as well as plants that respond well to shearing. Note comments on thinning each cultivar.

Using the Boxwood Guide

Substitutes

This section suggests other possible boxwood to substitute when a certain cultivar is not available or desired. Give consideration to each characteristic of the boxwood before substituting. Remember, each location and use is unique.

Size

In this section the approximate 15 and 25 year size of the boxwood is listed. Remember, the size of a cultivar is greatly affected by gardening practices, location, weather, and size and age of plant at time of installation. In addition, we have included a sketch of the plant to allow the gardener to better compare boxwood relative to each other.





‘Morris Midget’

Cultivar: *Buxus microphylla* var. *japonica* ‘Morris Midget’

Zone: 6-8

Growth Rate: Very slow, 0.5 to 1 inch per year

Sun Exposure: Sun or shade.



Attributes: ‘Morris Midget’ is a small dwarf cultivar. It is very compact. In full winter sun, some bronzing will occur but new spring growth will cover the bronzing. The growth rate of this cultivar makes it an appealing plant where space is limited. It responds well to pruning or can be left unpruned. It is slightly smaller than ‘Morris Dwarf’. Deer resistant.

Care: ‘Morris Midget’ requires little to no pruning when used as a specimen. It responds well to shearing when used in edging, parterres, and knot gardens. Thinning is recommended in late winter or early spring which will help reduce chance of disease. Remove any sports with hand pruners by cutting sporting stems back into interior of the plant.

‘Morris Midget’ is moderately resistant to boxwood leafminer. It has few pest or disease issues when planted and cared for properly.

Comments: This is the smallest boxwood we grow. Be patient with it as it is a very slow grower. We have seen it grown in full sun; however for best results, plant this boxwood in areas with afternoon shade.

Uses: Small specimen, low hedge, edging, parterre or knot garden.

Substitutes: ‘Morris Dwarf’
‘Grace Hendrick Phillips’
‘Green Pillow’

Size at 15 years: 1’ Tall x 1’ Wide

Size at 25 years: 1.25’ Tall x 2’ Wide

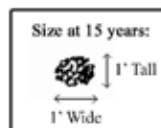




Photo: Mt Vernon Ladies Association

'Morris Dwarf'

Cultivar: *Buxus microphylla* var. *japonica* 'Morris Dwarf'

Zone: 6-8

Growth Rate: Very slow, 0.5 to 1 inch per year

Sun Exposure: Sun or shade.



Attributes: 'Morris Dwarf' is an excellent performing cultivar that is very compact. In winter sun, it will bronze; however, in spring new growth will quickly cover the bronzing. It is outstanding for edging formal beds or in parterre gardens and is very low maintenance. It responds well either pruned or left unpruned and is slightly larger than 'Morris Midget'. Occasional sports occur on this plant and they should be removed. Deer resistant.

Care: 'Morris Dwarf' requires little to no pruning when used as a specimen. It responds well to shearing when used in edging, parterres, and knot gardens. Thinning is recommended in late winter or early spring which will help reduce chance of disease. Remove undesirable sports with hand pruners by cutting sporting stems back into interior of the plant.

'Morris Dwarf' is resistant to boxwood leaf miner. It has few pest or disease issues when planted and cared for properly.

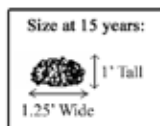
Comments: A very good dwarf boxwood. We have seen it in numerous full sun landscapes but, for optimal beauty, plant it so it receives some afternoon shade. Remember it is a dwarf boxwood and you must be patient with its growth.

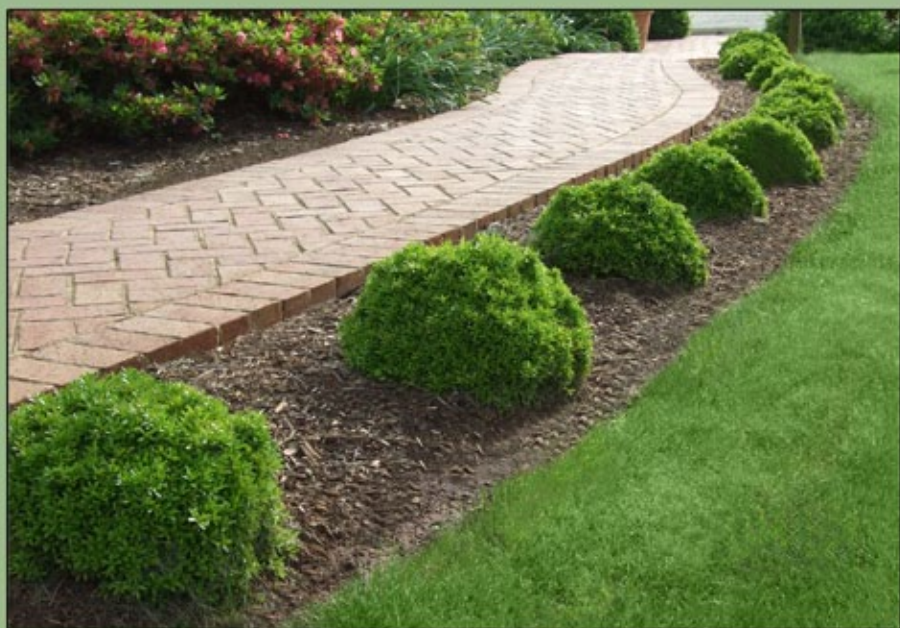
Uses: Small specimen, low hedge, edging, parterre or knot garden.

Substitutes: 'Morris Midget'
'Grace Hendrick Phillips'
'Green Pillow'

Size at 15 years: 1' Tall x 1.25' Wide

Size at 25 years: 1.5' Tall x 2.25' Wide





‘Grace Hendrick Phillips’



Cultivar: *Buxus microphylla* ‘Grace Hendrick Phillips’

Zone: 6-8

Growth Rate: Slow, 0.75 to 1.5 inches per year

Sun Exposure: Part sun or shade.

Attributes: ‘Grace Hendrick Phillips’ mounds and spreads very much like some of the dwarf Japanese hollies. The growth rate is slow enough that it does not outgrow the landscape but fast enough to be used as a primary plant in many landscapes. Be patient in the spring, as new growth appears slightly later than most boxwood. New foliage is light green and matures to a darker green. Deer resistant.

Care: ‘Grace H. Phillips’ requires little to no pruning, except when used in edging, parterre, or knot garden. If pruning is necessary, use hand pruners or shears. Occasional sports occur on this plant and they should be removed. Some thinning in late winter or early spring will help reduce disease incidence.

‘Grace H. Phillips’ is resistant to boxwood leafminer. It has few pest or disease issues when planted and cared for properly.

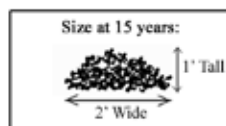
Comments: This boxwood is very highly rated in the National Boxwood Trials. Its spreading habit is very appealing. We have even seen mature plants cascading in a rock garden.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden.

Substitutes: ‘Morris Dwarf’
‘Morris Midget’
‘Green Pillow’

Size at 15 years: 1’ Tall x 2’ Wide

Size at 25 years: 1.5’ Tall x 3’ Wide





'Green Pillow'



Cultivar: *Buxus microphylla* 'Green Pillow'

Zone: 5-8

Growth Rate: Slow, 0.75 to 1 inch per year

Sun Exposure: Part sun or shade.

Attributes: 'Green Pillow' is known for its naturally dense, compact, oval habit. Its foliage is lime-green and its shape is larger but very much resembles 'Morris Dwarf' and 'Morris Midget'. In winter sun this cultivar will bronze; however bronzing or foliage burn will quickly disappear when new growth appears in spring. It is very common to see sports on this plant and they should be removed. Deer resistant.

Care: 'Green Pillow' needs very little to no pruning in most applications. It will need pruning if it is used as an edge, parterre, or knot garden. Use hand pruners or shears. Remove sports with hand pruners by cutting sporting stems back into interior of the plant. Thinning in late winter or early spring will help reduce possibility of disease.

'Green Pillow' is resistant to boxwood leafminer and when properly planted and cared for, this plant has few disease or pest issues.

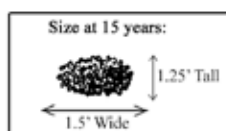
Comments: Plant this cultivar in shade and watch it thrive. It literally looks like a pincushion.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden.

Substitutes: 'Morris Midget'
'Morris Dwarf'
'Grace Hendrick Phillips'

Size at 15 years: 1.25' Tall x 1.5' Wide

Size at 25 years: 2'Tall x 3'Wide





insularis 'Nana'



Cultivar: *Buxus sinica* var. *insularis* 'Nana'

Zone: 6-8

Growth Rate: Slow to medium, 1 to 3 inches per year

Sun Exposure: Part sun or shade.

Attributes: *Insularis* 'Nana' is a low spreading cultivar with lime green new growth in the spring. New growth will slowly fade to a light green. Although considered a smaller cultivar, it is relatively fast growing. It is very similar to the cultivars 'Franklin's Gem' and 'Tide Hill'. Deer resistant.

Care: Prune *insularis* 'Nana' lightly in late winter or early spring to make a stronger and denser plant. This cultivar can be pruned with shears or hand pruners. Thinning is not typically necessary but, if this cultivar is sheared heavily, some thinning in late winter to early spring will allow air and sunlight to penetrate the plant.

Insularis 'Nana' is resistant to boxwood leaf miner. It has few pest or disease issues when planted and cared for properly.

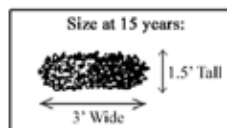
Comments: It is becoming increasingly popular due to its resistance to disease and pests. An annual light pruning will help develop rigidity in this boxwood and lessen the chance of the plant opening up in the center as it matures. It is very popular in the Northeast.

Uses: Small specimen, low hedge, foundation plant, edging, parterre, or knot garden.

Substitutes: 'Franklin's Gem'
'Justin Brouwers'
'Vardar Valley'
'Tide Hill'

Size at 15 years: 1.5' Tall x 3' Wide

Size at 25 years: 2'Tall x 4' Wide





'Franklin's Gem'



Cultivar: *Buxus microphylla sinica* 'Franklin's Gem'

Zone: 4-8

Growth Rate: Slow to medium, 1 to 3 inches per year

Sun Exposure: Part sun or shade.

Attributes: 'Franklin's Gem' is a low spreading cultivar with lime green new growth in the spring. New growth will slowly transition to an olive-green. It is very similar to the cultivars *insularis* 'Nana' and 'Tide Hill'. Deer resistant.

Care: 'Franklin's Gem' should be pruned lightly in late winter to early spring to make a stronger and denser plant. This cultivar can be pruned with shears or hand pruners. Thinning is not typically necessary but, if this cultivar is sheared heavily, some thinning in early spring would be beneficial.

'Franklin's Gem' is resistant to boxwood leafminer and has few pest or disease issues when planted and cared for properly.

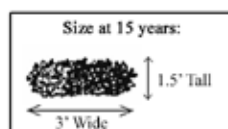
Comments: A light annual pruning will lessen the tendency of the plant to open up in the center over time. Popular, especially in the Northeast.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden.

Substitutes: *insularis* 'Nana'
'Justin Brouwers'
'Vardar Valley'

Size at 15 years: 1.5' Tall x 3' Wide

Size at 25 years: 2'Tall x 4' Wide





‘Justin Brouwers’

Cultivar: *Buxus sinica* var. *insularis* ‘Justin Brouwers’

Zone: 6-8

Growth Rate: Slow to medium, 1 to 3 inches per year

Sun Exposure: Sun or shade.



Attributes: ‘Justin Brouwers’ is a compact, mounding to rounded cultivar. It is extremely versatile. It can be used in applications where it is pruned or in gardens with minimal to no pruning. Foliage is a spectacular deep-green color even in winter. It holds its foliage deep into the interior of the plant. It is sensitive to poorly drained soils. Deer resistant.

Care: ‘Justin Brouwers’, as a juvenile plant and up to about 10-12 inches, has a slightly upright habit. An annual pruning to round the plant should occur in late winter or early spring. Thereafter it can be left basically unpruned and will develop into a spectacular plant that is somewhat rounded. An occasional light pruning in late winter or early spring may be preferred.

When used as edging, parterres, or knot gardens, pruning and shearing will be necessary. Use hand pruners or shears. Thinning in late winter or early spring is recommended to lessen disease occurrence.

‘Justin Brouwers’ is susceptible to boxwood leafminer. Special care should be taken when planting to ensure the plant is properly elevated and all drainage issues are addressed. Otherwise, it has few other pest or disease issues.

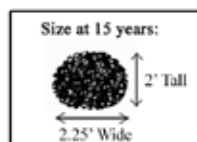
Comments: It is one of the best small to medium sized boxwood on the market. If planted correctly this plant is stunning; however we have seen numerous cases where it is planted in areas of poor drainage and the plant struggles. Use as a replacement or substitute for English boxwood. There is some discussion that ‘Justin Brouwers’ may be a *sempervirens* cultivar but testing has yet to prove this.

Uses: Small specimen, low hedge, foundation plant, edging, parterre, or knot garden, containers.

Substitutes: ‘Jensen’, ‘Glencoe’ (Chicagoland Green®) ‘Green Mound’, ‘Suffruticosa’ (English), ‘Green Velvet’ ‘Green Gem’

Size at 15 years: 2’ Tall x 2.25’ Wide

Size at 25 years: 3’ Tall x 3.5’ Wide





'Jensen'

Cultivar: *Buxus sempervirens* 'Jensen'

Zone: 6-8

Growth Rate: Slow to medium, 1 to 2 inches per year

Sun Exposure: Part sun or shade.

Attributes: 'Jensen' is a rounded cultivar that closely resembles *Buxus sempervirens* 'Suffruticosa' (English). It has bluish-green new growth in the spring that turns to a deep green by mid to late summer. Foliage is slightly larger than English. It thrives in dappled shade and soils with good drainage. Deer resistant.

Care: 'Jensen' flourishes when left basically unpruned. It should never be sheared. Shearing will increase canopy density and increase the chance of disease problems. Avoid uses where heavy pruning is necessary. Thinning is recommended either in winter for holiday decorations or in late winter to early spring before new growth appears. This will help sunlight and air to penetrate the canopy of the plant and reduce disease incidence. Use hand pruners.

'Jensen' is moderately resistant to boxwood leafminer. To lessen disease issues, it is important that proper planting techniques are used as well as the proper site is chosen. Monitor soil pH and maintain in 6.5-7.2 range.

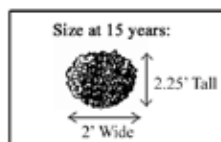
Comments: 'Jensen' is showing promise to be more resistant to some of the diseases that are affecting English boxwood. It shows promise if planted on a new site where there have not been diseased boxwood, there is good drainage, and there is full shade or afternoon shade. However, when planted in full sun, in an area with poor drainage, or as a replacement of diseased boxwood, it will struggle.

Uses: Medium specimen, low hedge, foundation plant, foliage for holiday decorations.

Substitutes: 'Justin Brouwers'
'Suffruticosa' (English)
'Green Velvet'
'Glencoe' (Chicagoland Green®)
'Green Mound'
'Green Beauty'
'Green Gem'

Size at 15 years: 2.25' Tall x 2' Wide

Size at 25 years: 3.5' Tall x 3' Wide





'Suffruticosa'



Cultivar: *Buxus sempervirens* 'Suffruticosa' (English)

Zone: 6-8

Growth Rate: Slow to medium, 1 to 2 inches per year

Sun Exposure: Part sun or shade.

Attributes: 'Suffruticosa' (English) is known for its soft, billowy outline and lush foliage. English boxwood is often referred to as "dwarf boxwood" due to its slow growth rate. However, in an ideal environment, the plant will continue to grow for 75 to 150 years and develop into a very large shrub. As a result, take care to avoid using this plant where it will ultimately be too large for the desired use. English boxwood has a distinct odor. Avoid poorly drained soils. Deer resistant.

Care: English boxwood thrives when left basically unpruned. Never shear. Shearing will increase the foliage density and thus the chance of disease problems. Avoid using this boxwood where heavy pruning is necessary. English thrives best when planted in shade to partial shade and left unpruned. Thinning is recommended either in winter for holiday decorations or in late winter to early spring before new growth appears. This will help sunlight and air to penetrate the canopy of the plant and reduce disease incidence. Use hand pruners.

English boxwood shows good resistance to boxwood leafminer. Take special attention when planting and caring for English boxwood as it is prone to disease issues. Do not replant it in areas where other English boxwood have died due to disease problems. Avoid areas with poor drainage and areas with direct afternoon sun. Monitor soil pH and maintain in 6.5-7.2 range.

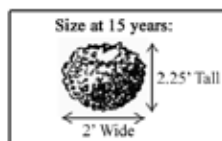
Comments: English boxwood in its optimal environment is untouched in its beauty. It has probably been the most extensively planted boxwood in the United States over the past 100 years. However, many people have planted it on undesirable sites and the plant has not done well. If planting English boxwood, take special considerations. If conditions are questionable, consider a different cultivar.

Uses: Medium specimen, low hedge, foundation plant, foliage for holiday decorations

Substitutes: 'Jensen', 'Glencoe' (Chicagoland Green®)
'Justin Brouwer', 'Green Beauty'
'Green Velvet', 'Green Mound', 'Green Gem'

Size at 15 years: 2.25' Tall x 2' Wide

Size at 25 years: 3.5' Tall x 3' Wide





'Elegantissima'



Cultivar: *Buxus sempervirens* 'Elegantissima'

Zone: 6-8

Growth Rate: Slow to medium, 1 to 3 inches per year

Sun Exposure: Part sun or shade.

Attributes: 'Elegantissima' will add color to the landscape with its green leaves accented with creamy-white edges. Its creamy variegation differs from many of the white margined cultivars. Use the foliage in holiday decorations. Avoid poorly drained soils. Deer resistant.

Care: With minimal to no pruning 'Elegantissima' will develop into a slightly pyramidal plant. If a more rounded shape is desired, prune lightly in late winter or early spring. Thinning is recommended either in winter for holiday decorations or in late winter to early spring before new growth appears. This will help sunlight and air penetrate the canopy of the plant which reduces disease incidence.

'Elegantissima' is moderately resistant to boxwood leafminer. If planted properly, it has few other pest or disease issues. Avoid areas with harsh winter winds.

Comments: The color of the foliage on this cultivar makes it a winner. We have seen it planted in full sun but it prefers some shade especially in the afternoon. It can really brighten shaded areas. It is a *sempervirens* cultivar, so at time of planting it is important to properly elevate the plant and address all drainage issues.

Uses: Small specimen, low hedge, foundation plant, foliage for holiday decorations, containers.

Substitutes: 'Golden Dream'

Size at 15 years: 2.5' Tall x 2' Wide

Size at 25 years: 4' Tall x 3' Wide





'Golden Dream'



Cultivar: *Buxus microphylla* 'Golden Dream' PP16052

Zone: 6-8

Growth Rate: Slow to medium, 1 to 3 inches per year

Sun Exposure: Sun or shade.

Attributes: 'Golden Dream' has a beautiful rounded and compact habit. The foliage is edged with heavy golden variegation. From a distance, the variegation makes the entire plant nearly a lime-green color. Deer resistant.

Care: 'Golden Dream' can be pruned lightly in late winter or early spring to maintain desired habit. Use hand pruners and shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant. 'Golden Dream' is resistant to boxwood leafminer and has few pest or disease issues when planted and cared for properly.

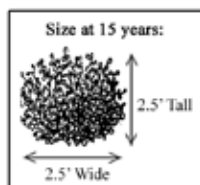
Comments: This promising boxwood is relatively new to us and the market. Remember it offers more of a lime coloring than the traditional white or creamy variegation. We like the fact that it is a microphylla and hope that it will be more tolerant to sunny locations as well as marginal soil conditions. In late fall and winter, we have seen this cultivar take on a natural orange tint as orange-red spots appear in the variegation. It seems to be a characteristic of the plant, so don't be alarmed.

Uses: Medium specimen, medium hedge, foundation plant, foliage for holiday decorations.

Substitutes: 'Elegantissima'

Size at 15 years: 2.5' Tall x 2.5' Wide

Size at 25 years: 3.5' Tall x 3.5' Wide





'Green Velvet'

Cultivar: *Buxus* x 'Green Velvet'

Zone: 6-8

Growth Rate: Medium, 2 to 3 inches per year

Sun Exposure: Sun or shade.



Attributes: 'Green Velvet' has a somewhat rounded habit that is slightly wider than tall. The foliage on this cultivar is a beautiful medium to light-green in spring and slowly transitions to a dark green. It is a cold-hardy hybrid boxwood that was developed in Canada. It is a selected seedling cross between *Buxus sempervirens* and *Buxus sinica* var. *insularis* and part of the "Green Series" of boxwood which include 'Green Mountain', 'Green Mound', 'Green Gem', and 'Green Velvet'. It is very similar to the cultivar 'Glencoe' (Chicagoland Green®). 'Green Velvet' will bronze slightly in winter especially when exposed to direct sunlight. Typically in spring, as temperatures rise, bronzed foliage will brighten and new growth will quickly transform the plant to green. Deer resistant.

Care: 'Green Velvet' should be pruned lightly in late winter or early spring to maintain desired habit. It may be sheared into edging and other formal applications. Use hand pruners or shears. Thinning is not necessary but, as with any boxwood, it will help increase airflow and sunlight penetration into the interior of the plant which reduces the chance of disease.

'Green Velvet' is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

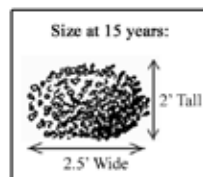
Comments: This is a good boxwood that has been used in many landscapes in the past 20-30 years. We have heard some reports of root issues possibly related to poor drainage, which may be explained by its sempervirens parentage. In many landscapes, it will reach its 15 year size at a moderate speed then slow its growing.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden, containers.

Substitutes: 'Green Mound'
'Glencoe' (Chicagoland Green®)
'Green Gem'

Size at 15 years: 2' Tall x 2.5' Wide

Size at 25 years: 2.75' Tall x 3.5' Wide





'Glencoe'



Cultivar: *Buxus* x 'Glencoe' (Chicagoland Green®)

Zone: 4-8

Growth Rate: Medium, 2 to 3 inches per year

Sun Exposure: Sun or shade.

Attributes: Chicagoland Green® will grow slightly wider than tall. It is an excellent cold-hardy cultivar that is extremely uniform in its growth. It is very similar to 'Green Velvet'. Chicagoland Green® will bronze slightly in winter especially when planted in full sun. Bronzed foliage will typically disappear quickly in spring as temperatures rise. Bronzed foliage will brighten and new growth will begin to appear. Deer resistant.

Care: Prune Chicagoland Green® lightly in late winter or early spring to maintain desired habit. It may be sheared into edging and other formal applications. Use hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant which reduces the chance of disease.

Chicagoland Green® is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

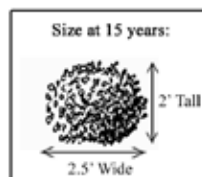
Comments: It is a selected hybrid from the Chicago Botanic Garden in Glencoe, Illinois. It is very difficult to distinguish it from 'Green Velvet'. Its hardiness and durability make it a good plant.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden, containers.

Substitutes: 'Green Velvet'
'Green Mound'
'Green Gem'

Size at 15 years: 2' Tall x 2.5' Wide

Size at 25 years: 2.75' Tall x 3.5' Wide





'Green Gem'



Cultivar: *Buxus* x 'Green Gem'

Zone: 4-8

Growth Rate: Medium, 2 to 3 inches per year

Sun Exposure: Sun or shade.

Attributes: 'Green Gem' is a cold-hardy hybrid boxwood with a spherical habit. It is often referred to as being in the "Green Series" of boxwood (see 'Green Velvet' for more information). It is very similar to 'Green Mound' but slightly smaller. To minimize bronzing, avoid planting in areas of direct winter sun. Deer resistant.

Care: 'Green Gem' should be lightly pruned in late winter or early spring to maintain desired shape. Use hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant which reduces the chance of disease.

'Green Gem' is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

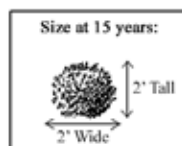
Comments: It was developed in Canada at Sheridan Nurseries. This boxwood has been planted extensively over the past 20-30 years. Its hardiness and non-domeineering size has been popular with many landscapers.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden, containers.

Substitutes: 'Justin Brouwers'
'Green Velvet'
'Green Mound'
'Glencoe' (Chicagoland Green®)

Size at 15 years: 2' Tall x 2' Wide

Size at 25 years: 2.75' Tall x 2.75' Wide





'Green Mound'



Cultivar: *Buxus* x 'Green Mound'

Zone: 4-8

Growth Rate: Medium, 2 to 3 inches per year

Sun Exposure: Sun or shade.

Attributes: 'Green Mound' is a cold-hardy hybrid boxwood with a spherical habit. It is often referred to as being in the "Green Series" of boxwood (see 'Green Velvet' for more information). It is similar to 'Green Velvet' but more rounded in its natural shape. 'Green Mound' will bronze slightly in winter especially when exposed to direct sunlight. The bronzed leaves will typically brighten as spring temperatures rise and then be covered as new foliage appears. Deer resistant.

Care: 'Green Mound' should be pruned lightly in late winter or early spring to maintain desired habit. It may be sheared into edging and other formal applications. Use hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant which reduces the chance of disease.

'Green Mound' is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

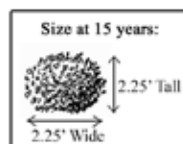
Comments: This is another of the hardy Sheridan Nurseries boxwood from Canada. It is very popular. In many landscapes, it will reach its 15 year size at a moderate speed then slow its growing.

Uses: Small specimen, low hedge, foundation plant, edging, parterre or knot garden, containers.

Substitutes: 'Justin Brouwers'
'Green Velvet'
'Glencoe' (Chicagoland Green®)

Size at 15 years: 2.25' Tall x 2.25' Wide

Size at 25 years: 3' Tall x 3' Wide





'Vardar Valley'



Cultivar: *Buxus sempervirens* 'Vardar Valley'

Zone: 5-8

Growth Rate: Slow to medium, 1 to 3 inches per year

Sun Exposure: Sun or shade.

Attributes: 'Vardar Valley' is very appealing due to its distinctive powdery blue new foliage in the spring combined with excellent winter hardiness. It matures into a broad, mounding plant. Spring blue foliage will fade to a deep green in summer. 'Vardar Valley' holds the deep green color through the winter. Avoid planting in areas where drainage is poor. Deer resistant.

Care: Lightly prune 'Vardar Valley' as needed in late winter or early spring to maintain desired shape and density. Use hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant.

'Vardar Valley' is resistant to boxwood leafminer. When planted properly in well-drained soils, this plant has few pest and disease problems.

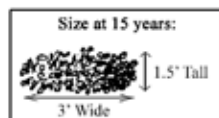
Comments: 'Vardar Valley' is one of the top plants in the National Boxwood Trials and test gardens. You must be patient with the plant in its juvenile stages (up to about 18" wide) as its habit is open and its branches are prominent. Do not plant in areas where drainage is questionable.

Uses: Small specimen, low hedge, foundation plant, foliage for holiday decorations.

Substitutes: 'GreenVelvet'
'Glencoe' (Chicagoland Green®)
insularis 'Nana'
'Franklin's Gem'

Size at 15 years: 1.5' Tall x 3' Wide

Size at 25 years: 2.5' Tall x 5' Wide





'Green Beauty'

Cultivar: *Buxus microphylla* var. *japonica* 'Green Beauty'

Zone: 6-8

Growth Rate: Medium, 2 to 4 inches per year

Sun Exposure: Sun or shade.



Attributes: 'Green Beauty' is an excellent medium-sized cultivar that has deep green glossy foliage with little winter bronzing. It has a naturally rounded habit that will typically be slightly wider than tall. Its branching structure makes for a very strong plant that can withstand breakage from most moderate to heavy snowfalls. It is very durable and recovers quickly if a limb is broken or if radical pruning is necessary. Deer resistant.

Care: 'Green Beauty' should be pruned lightly in late winter or early spring to maintain a more uniform shape. It will typically start a secondary flush of new growth in the late summer to early fall that may be burned and discolored by fall frost before it hardens off. These branches or "horns" can be pruned off any time after the first hard freeze of the fall, or left on the plant until early spring pruning. If the plant outgrows its desired size, it tolerates radical pruning. Prune with hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant which reduces the chance of disease.

'Green Beauty' is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

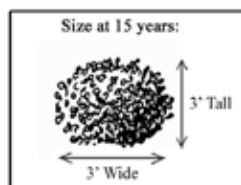
Comments: We really like this boxwood. Its durability and disease resistance are very good. We have planted it in locations where diseased English boxwood have died and it is thriving. Pruning as a young plant is a must to develop a good shape.

Uses: Medium specimen, medium hedge, foundation plant, containers.

Substitutes: 'Green Velvet'
'Green Mound'
'Glencoe' (Chicagoland Green®)
'Jim Stauffer'

Size at 15 years: 3' Tall x 3' Wide

Size at 25 years: 4.5' Tall x 5' Wide





'Wintergreen'

Cultivar: *Buxus microphylla* var. *japonica* 'Wintergreen'

Zone: 5-8

Growth Rate: Fast, 4 to 6 inches per year

Sun Exposure: Sun or shade.



Attributes: 'Wintergreen' is a vigorous, winter-hardy cultivar that is ideal when a medium to large foundation plant is desired. It is great for use in medium-sized hedges and is very tolerant of pruning or shearing. It has a tendency to bronze when exposed to direct winter sun but the bronzing will quickly disappear as temperatures rise in spring and as new growth emerges. It is very similar to 'Winter Gem'. Deer resistant.

Care: 'Wintergreen' should be pruned each late winter or early spring to maintain desired shape. Use hand pruners or shears. Additional prunings may be necessary in early to mid-summer, depending on the desired look and vigor of the plant. 'Wintergreen' tolerates more radical pruning if the plant has outgrown its desired size. Thinning is not necessary on this cultivar.

'Wintergreen' is moderately resistant to boxwood leafminer. When properly planted and cared for, it has few other disease or pest issues.

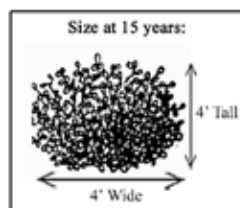
Comments: It is a great choice when you want to fill a space quickly. If left unpruned, a vigorous plant can become wiry but the plant will respond very well to hedge shears. There are many cultivars in the nursery industry with the name 'Wintergreen'. Some are very similar to this one and others are very different. When matching plants, be sure to check plant attributes and projected size before purchasing.

Uses: Medium specimen, medium hedge, low hedge, foundation plant.

Substitutes: 'Winter Gem'
'Jim Stauffer'
'Green Beauty'

Size at 15 years: 4' Tall x 4' Wide

Size at 25 years: 5.5' Tall x 5.5' Wide





‘Winter Gem’

Cultivar: *Buxus microphylla* var. *japonica* ‘Winter Gem’

Zone: 6-8

Growth Rate: Fast, 4 to 6 inches per year

Sun Exposure: Sun or shade.

Attributes: ‘Winter Gem’ is a round-shaped cultivar that is relatively vigorous. It tolerates a wide range of sites and uses. New foliage emerges a lime-green color and transitions to a deep, glossy green. It has a tendency to bronze when exposed to direct winter sun but the bronzing will quickly disappear in spring as temperatures rise and as new growth emerges. ‘Winter Gem’ is very similar to the cultivars ‘Wintergreen’ or ‘Faulkner’. Deer resistant.

Care: ‘Winter Gem’ should be pruned each year in late winter to early spring to maintain desired shape. Use hand pruners or shears. Additional lighter prunings may be necessary in early to mid-summer, depending on the desired look and vigor of the plant. ‘Winter Gem’ tolerates more radical pruning if the plant has outgrown its desired size. Thinning is not necessary on this cultivar.

‘Winter Gem’ is moderately resistant to boxwood leafminer and has few other pest or disease issues when planted and cared for properly.

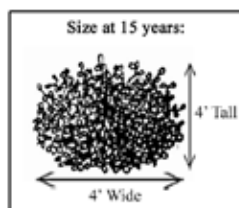
Comments: Great plant to fill space quickly. It is very similar to ‘Wintergreen’. It has very vigorous growth habit that can get rather wiry but it can be controlled with a good pair of hedge shears.

Uses: Medium specimen, medium hedge, low hedge, foundation plant.

Substitutes: ‘Wintergreen’
‘Green Beauty’
‘Jim Stauffer’

Size at 15 years: 4’ Tall x 4’ Wide

Size at 25 years: 5.5’ Tall x 5.5’ Wide





'Green Mountain'

Cultivar: *Buxus* x 'Green Mountain'

Zone: 4-8

Growth Rate: Medium to fast, 2 to 4 inches per year

Sun Exposure: Sun or shade.



Attributes: 'Green Mountain' is a cold-hardy, rounded, conical-shaped hybrid boxwood. It is often referred to as being in the "Green Series" of boxwood (see 'Green Velvet' for more information). 'Green Mountain' will bronze slightly in winter especially when exposed to direct sunlight but bronzing will quickly fade as new spring foliage begins to emerge. Deer resistant.

Care: Prune 'Green Mountain' lightly in late winter or early spring to maintain desired habit. Use hand pruners or shears. 'Green Mountain' is often sheared in a tight pyramid or conical shape to distinguish it from other plants in the "Green Series"; however when left unpruned, it will develop a more rounded conical habit. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant.

'Green Mountain' is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

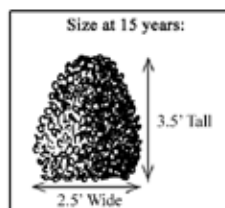
Comments: This is another of the cold-hardy boxwood from Sheridan Nursery in Canada. Some gardeners believe annual light prunings are necessary on this cultivar to improve its rigidity as an upright plant or the plant may open up with snow. It grows with relative vigor until it is about 15 years old then slows down.

Uses: Medium specimen, medium hedge, low hedge, foundation plant, containers.

Substitutes: 'John Baldwin'
'Dee Runk'
'Fastigiata'

Size at 15 years: 3.5' Tall x 2.5' Wide

Size at 25 years: 5' Tall x 3' Wide





'John Baldwin'

Cultivar: *Buxus microphylla* 'John Baldwin'

Zone: 6-8

Growth Rate: Medium, 2 to 3 inches per year

Sun Exposure: Sun or shade.



Attributes: 'John Baldwin' is grown for its true, broad, conical habit. Foliage is fine-textured and leaves are relatively small compared to many boxwood. New foliage has a blue tint which will slowly fade to a blue-green. Use this cultivar as an alternative to 'Green Mountain' when a true conical shape with minimal pruning is desired. Also, use it as an excellent substitute for conical Japanese hollies in sun or shade. Deer resistant.

Care: Up to 2 ft or so in height, prune 'John Baldwin' in late winter to early spring to develop a conical habit. Once the plant gets 2-3 feet tall, it requires less pruning, typically having to remove only side shoots or "horns" each late winter or early spring. Use hand pruners or shears although shears are seldom needed as plant matures. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant.

'John Baldwin' is susceptible to boxwood leafminer but has few other pest or disease issues when planted and cared for properly.

Comments: This may be the best pyramidal growing boxwood that we have seen. Being a *microphylla*, it is proving to be more durable with regard to disease and its adaptation to a wider range of soil conditions. We have seen it perform well in marginally wet locations; however we don't recommend planting any boxwood in areas where drainage is poor.

Uses: Medium specimen, medium hedge, foundation plant, container.

Substitutes: 'Dee Runk'
'Fastigiata'
'Green Mountain'

Size at 15 years: 3.5' Tall x 2.5' Wide

Size at 25 years: 6' Tall x 3.5' Wide





'Jim Stauffer'

Cultivar: *Buxus microphylla* var. *japonica* 'Jim Stauffer'

Zone: 5-8

Growth Rate: Medium to fast, 2.5 to 5 inches per year

Sun Exposure: Sun or shade.



Attributes: 'Jim Stauffer' is an excellent foundation plant that is slightly more vigorous than some cultivars, yet can be maintained in a formal shape. It grows in a comparable height-to-width ratio. It also responds very well to pruning or shearing. It has proven to be more cold-hardy than other *Buxus microphylla*. 'Jim Stauffer' can be used as a great substitute for *Buxus sempervirens* (American) when a plant of similar shape is desired but with smaller ultimate size. Deer resistant.

Care: Lightly pruning 'Jim Stauffer' in late winter or early spring is necessary to maintain a more uniform shape. It will occasionally start a secondary flush of new growth in the late summer to early fall that may freeze before it hardens off. These branches or "horns" can be pruned off after the first hard freeze of the fall or in early spring. 'Jim Stauffer' tolerates more radical pruning if the plant has outgrown its desired size. Prune with hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant.

'Jim Stauffer' is moderately resistant to boxwood leafminer and has minimal other disease and pest issues when planted and cared for properly.

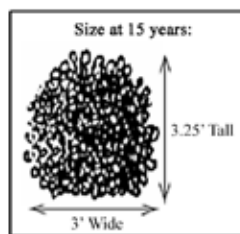
Comments: We like this boxwood. It has foliage that is very similar to 'Green Beauty' but its habit is more upright. Its hardiness also makes it the choice of many gardeners in colder climates.

Uses: Medium specimen, medium hedge, foundation plant, containers.

Substitutes: *sempervirens* (American)
'Rotundifolia'
'Green Beauty'
'Wintergreen'
'Winter Gem'

Size at 15 years: 3.25' Tall x 3' Wide

Size at 25 years: 5' Tall x 5' Wide





'Rotundifolia'



Cultivar: *Buxus sempervirens* 'Rotundifolia'

Zone: 6-8

Growth Rate: Medium to fast, 3 to 5 inches per year

Sun Exposure: Sun or shade.

Attributes: 'Rotundifolia' is an upright rounded boxwood with unique foliage. Mature leaves are very shiny dark green even through the winter. Leaves are nearly rounded and some can be as large as a nickel or quarter. Deer resistant.

Care: Prune 'Rotundifolia' lightly in late winter to early spring as needed to maintain desired habit. Use hand pruners or shears. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant and reduce the chance of disease.

'Rotundifolia' is moderately resistant to boxwood leafminer. When planted properly in well-drained soils, this plant has few other pest and disease problems.

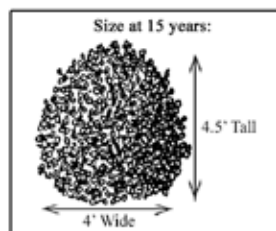
Comments: The foliage on this boxwood is what makes it unique. From a distance, the habit looks very similar to *sempervirens* but when you get close to it the large, shiny, rounded foliage is strikingly different.

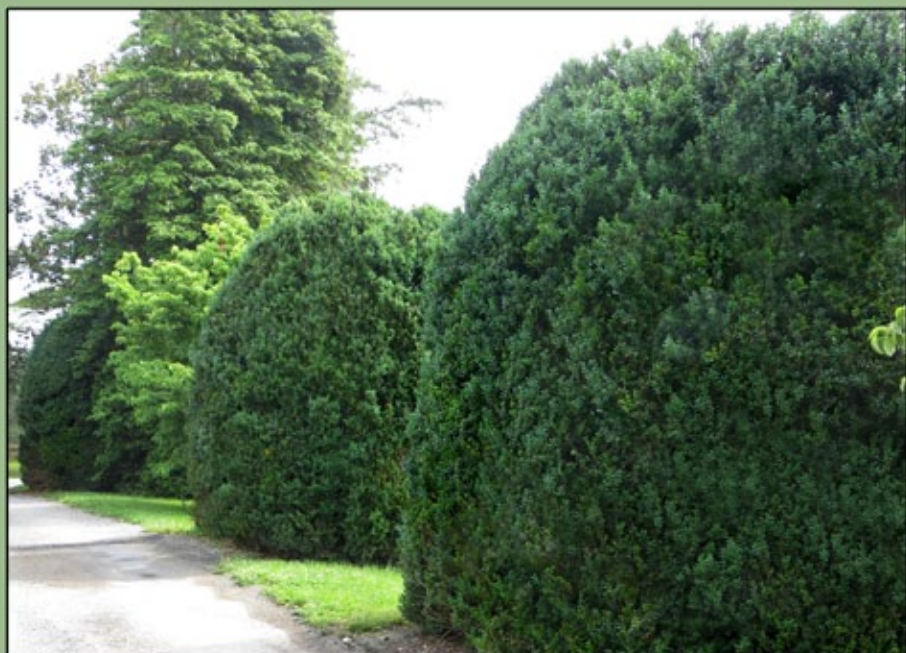
Uses: Tall specimen, allée, tall hedge, medium hedge, foundation plant.

Substitutes: *sempervirens* (American)
'Jim Stauffer'

Size at 15 years: 4.5' Tall x 4' Wide

Size at 25 years: 6' Tall x 5.5' Wide





sempervirens



Cultivar: *Buxus sempervirens* (American)

Zone: 5-8

Growth Rate: Medium to fast, 3 to 5 inches per year

Sun Exposure: Sun or shade.

Attributes: American boxwood is a classic, large-growing upright rounded boxwood. In an ideal environment, the plant will continue to grow for 75 to 150 years and develop into a massive shrub (sometimes as large as 15 ft tall and wide or more). It has excellent dark green winter foliage and cuttings are a favorite for holiday decorations. Be especially careful to plant this cultivar in areas with good drainage. Deer resistant.

Care: Prune American boxwood lightly in late winter or early spring to maintain desired habit. It tolerates more radical pruning if the plant has outgrown its desired size. Use hand pruners, shears, and loppers. Thin in winter for holiday decorations or early spring before new growth appears to increase airflow and light penetration into the interior of the plant thus reducing the incidence of disease.

American boxwood is moderately resistant to boxwood leafminer. When planted properly in well drained soils, this plant has few other pest or disease problems.

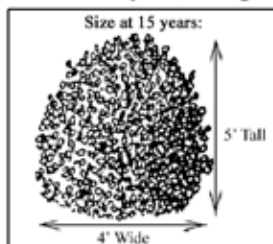
Comments: This boxwood has been the backbone of many Colonial American landscapes for many years. Take care to avoid using this plant where it will ultimately be too large for the landscape.

Uses: Tall specimen, allée, tall hedge, medium hedge, foundation plant, foliage for holiday decorations.

Substitutes: 'Rotundifolia'
'Jim Stauffer'

Size at 15 years: 5' Tall x 4' Wide

Size at 25 years: 7' Tall x 6' Wide





'Dee Runk'



Cultivar: *Buxus sempervirens* 'Dee Runk'

Zone: 6-8

Growth Rate: Fast to medium, 3 to 6 inches per year

Sun Exposure: Sun or shade.

Attributes: 'Dee Runk' is an excellent upright cultivar with a naturally vertical habit. With some pruning, it can be a tight conical shape. It will develop a columnar habit with little to no pruning. Use as an excellent choice for narrow hedges or accenting a door or corner. Deer resistant.

Care: 'Dee Runk' responds very well to pruning. Use hand pruners or shears. Lightly prune, as needed, in late winter or early spring to maintain density and desired form. If winter snow or ice has damaged any limbs or pulled them out from the plant, remove them. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant. If a tight conical form is desired, training will be required. Depending on growth and prior maintenance, a light annual pruning followed by a heavier pruning every 5 years or so is necessary to maintain its form and minimize splaying due to snow and ice or even heavy wet foliage in spring.

Little or no pruning will yield a more columnar habit. Understand that this habit will allow branches to potentially splay out from the plant especially in frozen winter precipitation or heavy new growth in late spring.

'Dee Runk' is moderately resistant to boxwood leafminer and when planted properly, it has few other pest or disease issues.

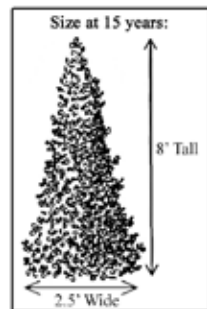
Comments: We believe this plant is best when pruned into a tight conical form. Its versatility of growing in full sun or full shade make it a great option in many different landscapes. Compared to 'Fastigiata', it is slightly narrower.

Uses: Tall specimen, allée, tall hedge, medium hedge, foundation plant, holiday foliage, containers.

Substitutes: 'Fastigiata'
'John Baldwin'

Size at 15 years: 8' Tall x 2.5' Wide

Size at 25 years: 12' Tall x 3' Wide





'Fastigiata'

Cultivar: *Buxus sempervirens* 'Fastigiata'

Zone: 6-8

Growth Rate: Fast to medium, 3 to 6 inches per year

Sun Exposure: Sun or shade.



Attributes: 'Fastigiata' is an outstanding upright cultivar. The foliage is rich green with a hint of blue. Its true habit is upright. Depending on the gardener's preferences, this boxwood can either be trained into a conical shape or, with minimal pruning, it can be a broad columnar shape. It is an excellent choice for narrow hedges or accenting a door or corner. Deer resistant.

Care: 'Fastigiata' responds well to pruning. Use hand pruners or shears. Lightly prune in late winter or early spring to maintain density and desired form. If winter snow or ice has damaged any limbs or pulled them out from the plant, remove them. Thinning is not necessary but, as with any boxwood, will help increase airflow and sunlight penetration into the interior of the plant.

If a tight conical form is desired, training will be required. Depending on growth and prior maintenance, a light annual pruning followed by a heavier pruning every 5 years or so is necessary to maintain form and minimize splaying due to snow and ice or even heavy wet foliage in spring.

Little or no pruning will yield a more broad columnar habit. Understand that this habit will lend itself to branches splaying out from the plant especially in frozen winter precipitation or heavy new growth in late spring.

It is moderately resistant to boxwood leafminer and it has few other pest or disease issues.

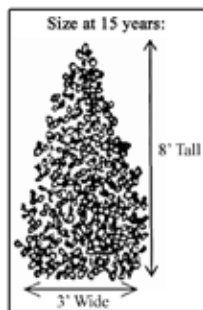
Comments: This is a very good upright boxwood. Our preference is to prune it to a tight cone. It can take full sun or full shade. Its foliage is slightly bluer and habit slightly broader than 'Dee Runk'.

Uses: Tall specimen, allée, tall hedge, medium hedge, foundation plant, holiday foliage, containers.

Substitutes: 'Dee Runk'
'John Baldwin'

Size at 15 years: 8' Tall x 3' Wide

Size at 25 years: 12' Tall x 4' Wide



The Next Generation of Boxwood

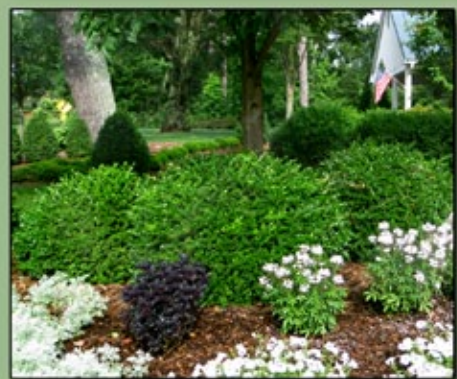
At Saunders Brothers, Inc. we are constantly searching for new and improved plants whether it is an Azalea or a Zinnia. In boxwood, we are evaluating over 100 different cultivars. To truly evaluate a boxwood, we believe it requires years of observation and testing.

Some of the criteria we consider:

- Aesthetic appeal. Does the plant “wow” you after a quick look?
- Natural habit. How does the plant grow naturally with no pruning?
- Use. Is the plant superior to another plant that is on the market or does it offer a new option for the landscape?
- Disease and pest resistance. Is the plant more resistant to common boxwood problems?

We hope that based on these criteria, we can introduce new plants to the market that are of superior quality and usefulness. Please stay tuned for what is coming!





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Boxwood Specimen Comparison

Note: Shapes pictured represent 15 year old plants pruned to our recommendations. Pruning is especially important in the first 3 to 5 years of the plant's life. Shapes will vary with the intensity and intent of pruning as the plant grows to maturity.





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