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Fertilization of Cool Season Grasses

By Melanie | September 2015 - Vol.1 No. 9

Fall is the optimal time of the year to fertilize cool season turfgrass (e.g., Kentucky bluegrass, tall and fine fescues) . The advantages of fall fertilization are increased density, increased root growth, decreased spring mowing, improved fall-spring color, decreased weed problems, increased drought tolerance, and decreased summer disease activity. Cooler temperatures and shorter days provide ideal conditions to maximize root growth and food storage prior to winter. Proper fertilization will help provide quality turf when spring arrives. However, Virginians often overuse fertilizer and lime which can negatively impact surface and ground water quality.

If soil already has nutrients, why do we need to add fertilizer? Although the amount of nutrients in most soils is relatively sufficient in comparison to the grasses' requirements, much of this potential supply is unfortunately in a form plants cannot use; or else the nutrients are not supplied fast enough at the time the plant is growing in the fall. The value of the fertilizer depends on the total amount of nutrients and the source of nitrogen in the fertilizer.

Soil test

The best way to determine if your lawn requires certain nutrients is to get the soil tested about every 3 years. The results will provide the amount of phosphorus, potassium, calcium and magnesium available in your soil. (See April 2015 Garden Shed newsletter for further information on soil tests). Since growing conditions are ideal at this time of year, grasses respond quickly to soil test recommended applications of fertilizer. Lime takes weeks and months for benefits to be fully realized, making fall and winter the best time for its application.

The soil test will also tell you the acidity (pH) of your soil and how much, if any, lime is needed. Our region is very acid and may require supplemental lime. The pH of the soil governs what nutrients are available to plants. If the soil pH is above or below the recommended range (6.2 – 7.0), nutrients may not be soluble (absorbable by plants) or they may be so soluble that they become toxic. Therefore, a plant can show signs of nutrient deficiencies or toxicity even when the correct amount of fertilizer is applied . Too many times, homeowners put down lime every year not knowing if it is even necessary. The soil report tells specific amounts of lime, phosphorus and potassium your soil needs to provide adequate nutrition for the turfgrass. Nitrogen, however, cannot be reliably evaluated by a soil test, therefore the test results will not contain that recommendation.

What if I don't fertilize?

Without the proper nutrients your lawn will gradually thin and weeds will invade. Healthy lawns have less disease, fewer insect and weed problems . If you have a healthy stand of grass, there is less chance for nutrient and soil runoff to surface waters .

Fertilizer analysis

All fertilizer packages must have three numbers present on the package such as 10-10-10 or 16-4-8. These numbers represent the percentage by weight of nitrogen or N, phosphorus or P and potassium or K. So a 50 pound bag of 10-10-10 contains 5 pounds each of nitrogen, phosphate and potassium (calculated as 50 pounds times 0.1 or 10% equals 5 pounds). These three elements are the primary minerals needed for plant growth. The package also details the percentage of other nutrients included such as iron and sulfur.

NITROGEN (N) Fall fertilizer with appropriate amounts of N lead to better turf next spring, including improved turf density, color, above ground vegetative growth and food storage. Nitrogen is absorbed by plants from the soil in the greatest quantities.

PHOSPHORUS (P) The second number on the bag is phosphorus which is essential in all phases of plant growth, most notably root growth which takes place over fall and winter.

POTASSIUM (K) Also known as potash, potassium is essential for plant growth and plants take large amounts from the soil. The word potash goes back to colonial days when wood and other organic materials were burned in pots for the manufacture of soap. The ashes were rinsed with water, collected and allowed to evaporate. The residue was largely potassium salts. Today potassium is mined from deposits deep in the earth. Plants use as much potassium as they do nitrogen which is three to four times the amount of phosphorus used.

In general lawns respond better to fertilizer ratios high in nitrogen. However, no more than 1 pound of N/1000sq ft should be applied in a single application. Slow release fertilizers may be used in greater quantities than water soluble fertilizers without the threat of burning the grass. They are more expensive, but are more convenient and may be used less frequently. We'll look at precise calculations later.

Nutritional needs vary from month to month. The source of nitrogen in fertilizers influences the availability of this element to the turf grass. There are two types of nitrogen sources: quickly available and and slowly available. The label on the bag describes the release characteristics of the nitrogen using the initials WIN and WSN which stand for water insoluble nitrogen and water soluble nitrogen respectively. WIN provides nitrogen that is slowly available because it must be broken down to a simpler form for use. Solubility depends on the kind of material used in the composition of the fertilizer. WSN dissolves quickly and is usually in a simpler form, such as ammoniacal nitrogen.

Plants absorb nutrients continuously, so it is beneficial to provide them with a balance throughout their growth. This is probably best achieved by using slow release fertilizer, which releases nutrients at a rate that makes them available over a long period of time.

Slow release fertilizers (WIN)

Advantages

- fewer applications
- low burn potential
- comparatively slow release rate

Disadvantages

- Unit cost is high. but lawn may not require as much
- release rate governed by other factors other than needs of the plant

Conventional fertilizers (WSN)

- Fast acting
- lower cost

Disadvantages

- greater burn potential
- solidifies in bag when wet
- nitrogen leaches readily

Measure your lawn

It is critical to know the size of your lawn in order to calculate the amount needed. Divide the lawn in rectangles, squares or triangles. For help in this calculation, go to http://www.supersod.com/diy/how-to-sod-yard-area-calculator.html and plug in the requested numbers: length, width, and diameter.

Not knowing the size of your lawn usually results in:

- Buying too much fertilizer.
- Storing left over products for next use or disposal.
- Applying too much lawn product which can result in more mowing, reduced plant health and undesirable off-site effects (nitrate leaching/runoff, and phosphorus runoff,).
- Buying the wrong amount of fertilizer to treat the lawn area often results in not achieving the desired appearance.
- Using your time and money ineffectively.

When to fertilize?

The best time to fertilize cool-season grasses in Virginia is from August 15 through November at 4 week intervals.

Application Rate

In general lawns respond better to fertilizer ratios high in nitrogen. However, no more than 1 pound of N per 1000 sq ft. should be applied in a single application when using a water soluble nitrogen. Applications should be distributed at a minimum of 4 weeks apart from September through November. However, slow release fertilizers may be used in greater quantities without the threat of burning the grass.

The amount of nutrients required by an established lawn or turfgrass area depends on the type of grass plants and your management practices. In other words, how much care you decide to give the lawn must be balanced with the demands of that particular type of grass. A vigorously growing, watered lawn from which the clippings are removed requires more added nutrients than a lawn that is not watered during the summer and where clippings are left on the lawn. Consequently, in developing your own lawn fertilizer program, it is appropriate to decide whether your lawn is going to be high or low maintenance.

High-maintenance lawns are characterized by vigorously growing plants. These lawns are watered during the summer to maintain green growth. Va Tech does not encourage watering in the summer , but allow grass to brown as summer gets hotter. It will green up in the fall. Clippings left on the lawn gradually decompose and reduce the need for fertilizer.

Low-maintenance lawns do not commonly receive watering (other than rainfall) during the summer months and grass growth is minimal during hot, dry periods. Clippings are usually left on the lawns.

The following programs were developed by the Virginia Cooperative Extension to help homeowners know how many pounds of nitrogen to apply each month in the fall depending on the quality of lawn desired. As with so many things in life, we all want high quality lawns; but we have to balance our wants with the money and time we're willing to invest.

Program 1 – Use this table if the fertilizer is less than 50% WIN or other slow release nitrogen source.

Nitrogen Application By Month

Quality Desired	**Sept.**	**Oct.**	**Nov.**	**May 15-June 15**
	———-lbs N/1000 sq ft ———-			
Low	0	1	0	0-1/2
Med	1	1	0	0-1/2
High	1	1	1	0-1/2

Program 2 – Use this table if the fertilizer is more than 50% WIN or other slow release nitrogen source

Nitrogen Application By Month

Quality Desired	**Aug 15 to Sept 15**	**Oct 1 to Nov 1**	**May 15 to June 15**
	————————-lbs N/1000 sq ft ————————-		
Low	1.5	0	0
Med	1.5	1.5	0
High	1.5 to 2	1.5	0 to 1.5

Using fertilizer analysis to calculate nitrogen rates

In order to determine how many total pounds to distribute on your lawn, a calculation must be done. For example:

- If you are using a 16-4-8 fertilizer, the first number(%N) on the bag is 16%N

- Calculate how many pounds are to be applied of N per 1000 sq. ft. by dividing the amount of N you want to add(1 pound of N for example) by the % of N(16% in this case which is the same as .16)

1 divided by 0.16=6.2 pounds of fertilizer in order to apply 1 pound of N per 1000 sq. ft. If you have a 5500 sq. ft lawn multiply the area (5500/1000 sq. ft. which equals 5.5)) by 6.2 pounds and get 34.1 pounds. Round to 34 pounds of fertilizer to apply 1 pound N to your lawn

How to apply

It is important to uniformly apply fertilizer containing nitrogen. Lack of uniformity results in streaking or different shades of green turf in the lawn. Drop type or rotary type spreaders are best to use. When using drop type spreaders, be sure to overlap the wheel tracks since the fertilizer is distributed between the wheels. These spreaders can be difficult to maneuver around shrubs and trees. Rotary spreaders usually give a better distribution because they cover a bigger swath. Apply half the material in one direction and the other half in a perpendicular direction. Avoid application to any non turf areas such as sidewalk, patios, driveways or roads where it may enter the water supply. Blow or sweep any fertilizer away. Do not hose it. Avoid applications if weather forecasts call for heavy rainfall. Having a 1/4 inch of rain after application is an ideal way to move fertilizer into the soil.

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Cover Crops

By Cleve Campbell | September 2015 - Vol.1 No. 9

The gardening season is winding down, the days are getting shorter and the nights are getting cooler. After an intense spring and summer of planting, harvesting, weeding and fighting that endless war on pests, it's time to take a gardening break. That was my gardening philosophy for many years, and unfortunately, I was missing out on an opportunity to improve my garden. As Ben Franklin said, "Watch the pennies and the dollars will take care of themselves." Just like taking care of pennies, it's often the little things we do in the garden that make a world of difference.

One of the most important things a gardener can do to improve the soil is to add organic matter in the form of compost, manures or other organic materials, such as leaves, straw, or grass clippings. Earthworms, bacteria, fungi, nematodes and other forms of life utilize the organic matter to build a healthy or "happy" soil. I have found that one final push in the fall can make a big difference in my garden soil–planting a cover crop or "green manure" crop.

Instead of being harvested, a cover crop is grown to provide vegetative cover for the soil. It can be left on the surface as mulch or tilled while it is still green into the soil, becoming a green manure. (Brady & Weil) Garden soil can be abused during the growing season from tilling, weeding, harvesting, and foot traffic. Over

the years I have found that planting cover crops is an economical and easy way to improve soil structure and overall soil quality.

Cover crops have a place in the home garden regardless of garden size and provide many benefits:

Soil erosion

The roots of a cover crop stabilize the root zone or surface of the soil, reducing the risk of erosion from wind and rain. The leaves and stems of the cover crop also decrease soil erosion by reducing the impact of rain and potential runoff. I think of soil as an investment in the future. After years of testing, analyzing, tweaking the pH levels, adding nutrients and organic matter, it just makes sense to protect my investment and decrease the risk of my valuable soil being washed or blown away. Regardless of the time of year, I want to protect my soil by keeping it covered, either with a vegetable crop or a cover crop, and in our area we can grow cover crops year around to protect our soil.

Soil Compaction

Cover crop root systems can be used to combat both shallow and deep compaction. Cover crops with taproot (forage radishes) reach deep into the soil and can break up compacted soil layers. Likewise, the extensive root systems of grass cover crops (cereal rye) reduce surface compaction making it easier for vegetable roots to access essential water and nutrients that may previously have been unavailable.

Soil organic matter

Cover crop residues increase soil organic matter, providing numerous benefits to the soil and successive crops. Increasing organic matter improves soil structure, soil water holding capacity and infiltration, and soil aggregate stability. Decaying plant material contributes nutrients back to the soil to be used by future crops.

Weed Suppression

Cover crops can provide an incremental benefit of weed control by out-competing weeds for light, water and nutrients. Research has found that cereal rye also exhibits an allelopathic effect on weeds, i.e., acts as a natural herbicide,

The Allelopathic Effect

Cereal rye produces several compounds in its plant tissues and releases root extractions that inhibit germination and growth of weed seeds. These allelopathic effects, together with cereal rye's ability to smother other plants with cool weather growth, makes it an idea choice for winter weed control. Cereal rye can be planted in our area up to the end of October.

However, be aware that in addition to suppressing weed growth, allelopathic compounds may suppress germination of small seed vegetable crops (large seeds are rarely affected) if they are planted shortly after the incorporation of cereal rye residual. Cereal rye should be incorporated 3-4 weeks into the soil before small seed vegetables, such as lettuce, are planted. Cereal rye may grow as tall as 3-4 feet by early spring and will need to be cut with either a weed-eater or lawn mower before being incorporated into the soil.

Disease and Pest Management

Many articles have been published recently about cover crops being another tool for use in disease and pest management. Particular members of the brassicas family, certain mustards, and rapeseed varieties help control soil-borne pathogens such as root knot nematodes and verticillium wilt.

Root knot nematodes are microscopic worms that attack many summer vegetables including cucumbers, tomatoes, eggplants, okra, and cantaloupes.

Plants infected with root knot nematodes will be stunted, wilt frequently and produce little or no harvest. When you pull up these plants, look for knotted and bumpy roots. These characteristics indicate the presence of **the destructive root knot nematode parasite.**

Verticillium wilt affects tomato, potato, pepper and eggplants in the vegetable garden. The pathogen usually enters the plant though young roots and then grows into and up the water-conducting vessels of roots and stem. As the vessels become plugged and collapse, the water supply to the leaves is blocked. With a limited water supply, the leaves begin to wilt on sunny days and recover at night. This process may continue until the entire plant is wilted, stunted or dead.

If your cover crop goal is to help control soil pathogens such as root knot nematodes or verticillium wilt, 'Dwarf Essex' rapeseed (canola), and 'Caliente 119' mustard have proven effective in various field trails. In Central Virginia, these cover crops need to be planted in mid-September to early October and tilled into the soil two to three months later. Mustard and rapeseed contain a chemical and an enzyme in the plant cell wall. When the cell wall is damaged, the chemical and the enzyme come into contact and the enzyme breaks down the chemical into a compound that behaves as a fumigant. The folks at Penn State recommend that these cover crops be finely chopped before they are incorporated into the soil, and should be **incorporated into the soil immediately** after mowing because the bio-active compounds that help control soil pathogens are unstable. "A**s much as 80**% **can be lost** if the cover crop is not incorporated (into the soil) **within 15 minutes** of mowing."

Low Maintenance

Cover crops require very little maintenance, and additional nutrients are seldom needed to support them since cover crops scavenge nutrients already present in the soil, and may even "fix" additional nitrogen from the atmosphere.

Having talked a bit about all the marvelous things cover crops can do for our garden, the next step is selecting which cover crop to plant. Unfortunately, this is not a one-size-fit-all decision and a little planning is needed to maximum the benefits.

In general, cover crops are divided into two major categories: legumes (pea family) and nonlegumes (grasses and grain crops). Legumes include such plants as peas, Fava beans, clovers and vetches and are generally grown for their ability to capture or "fix" nitrogen from the air and make it available to plants. In general, legumes are slow to establish and are not recommended as a weed control. Nonlegume crops are small grains and grasses such as cereal rye, wheat, oats and barley. Nonlegume crops are generally planted to protect the soil from erosion, add organic matter to the soil, and suppress weeds. They do not have the capacity to add additional nitrogen but will scavenge nutrients such as nitrogen and phosphorus and prevent them from leaching out of soil. When the green material is tilled into the soil, the green manure is broken down and nitrogen, phosphorus and other trace elements become available for use by subsequent plants. Cereal rye is quick growing and is highly recommended for controlling weeds.

Selecting and Planning a Cover Crop

One of the essentials for a good cover crop is timing which also requires some planning. Plan your cover crop in advance by selecting the best species for your gardening conditions and obtain seed early so you can be ready to plant at the proper time. Virginia Cooperative Extension Publication 426-344 provides not only a list of recommended cover crops for Virginia, but also information on planting recommendations per 100 square

feet, when to plant, when to turn under, the various attributes of each cover crop, and miscellaneous information on soil requirements, hardiness, etc. The New England Vegetable Guide provides a brief description and lists attributes of the various cover crop plants. Gardeners plant and harvest different crops at different times. Planning ahead makes it easier to stagger the planting and termination of cover crops with the planting and harvesting of vegetables in the garden.

Decide which vegetables crops you want to plant in the spring so you can plan your winter crops accordingly. If you intend to plant early vegetables, such as cabbage, broccoli, spinach, and beets, plant a cereal cover crop such as rye or oats the preceding fall. If you intend to plant vegetables in April or early May, a legume crop may be a winter crop option, as it will have sufficient time to grow so as to provide a nitrogen benefit. Legumes will provide even more nitrogen if the vegetable crop is not planted until late May or June. Also, if you are planting a cover crop in late October, you'll need to select a cover crop that germinates at low soil temperatures such as cereal rye or Fava beans.

Ceral Rye planted between garlic beds.

If you are not planning on planting fall or winter vegetables, consider seeding your entire garden in a cover crop. Also, cover crops may be sown in between "rows" of overwintering vegetables such as garlic.

A combination winter cover crop planting of legume (hairy vetch) and cereal rye can be sown in the fall to provide both a source of nitrogen and weed control.

If you are interested in incorporating cover crops in your garden year around, "The Joys of Cover Cropping Part 2: Cover Cropping Strategies and Species" by Harry Ussery provides recommendations for year-round (fall, winter, spring and summer) strategies.

Planting Cover Crops

To prepare your cover crop bed, remove all old plant material, debris and large stones, and rake the planting area smooth. Seed can be hand-broadcasted over the intended area at the proper rated suggested by Virginia Cooperative Extensive Publication 426-344. Good seed-to-soil contact improves germination. When seeds get wet, the seed coat splits and the germinating seed dries out which quickly destroys the seedling. Good soil contact ensures that the seed will not be exposed to the drying effects of sun and wind and it provides the seed with the continued moisture needed to complete the germination and emergence process. After the seed has been broadcast, lightly rake and tamp the seeded area with the rake head and water the cover crop with a fine water mist.

It is best to rake or lightly till larger seeds into the soil to ensure good germination. Crops with large seeds such as pea, vetch, oat, and cereal rye may be planted to a depth of 1-1½ inches.

Terminating the Cover Crop

One of the big advantages for planting a cover crop is that they are generally very easy to get established. However, that ease can also promote a weed problem when cover crops are left to go to seed. Buckwheat and vetches generally reseed themselves with little difficulty so the gardener needs to be vigilant in mowing or pulling the crop before it goes to seed.

In conclusion, not planting a cover crop is a missed opportunity for improving your garden. Planting a cover crop is like saving pennies–one penny or one cover crop is not going to be that noticeable. However, just like compounding interest, several years of using cover crop strategies in your garden can greatly affect the quality and health of the soil over time. Regardless of garden size, cover crops provide an easy, economical way to improve soil and guard against erosion. In addition to the benefit of improved production from improved soil, a garden that is filled with green in mid-winter is much more appealing to the eye than a bed of winter weeds or bare soil!

Thanks for taking the time to stop by The Garden Shed and we hope to see you again next month!

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September Tips and Tasks in the Vegetable Garden

By Cleve Campbell | September 2015 - Vol.1 No. 9

The "Dog Days of August" are finally in the rear view mirror. September in the Piedmont is a month that transitions into fall with hot summer days but cooling nights. It's also a month that confronts the gardener with mixed feelings. After a long season of planting, weeding, harvesting, and battling an ever-changing list of pests, I sometimes wish that the season would just come to an end! At other times, I want to extend the growing and harvesting season into winter. But, mixed feelings or not, there are always gardening tasks to do, and here is my list for September.

Plant garlic in our area during the month of October. Remember, many retailers quickly exhaust their inventories of the most popular varieties before October. If you haven't purchased garlic for fall planting, time is running out. A few garden centers in our area sell garlic bulbs for fall planting but the varieties are somewhat limited. However, an online search for "Garlic Bulbs for Sale" will bring up numerous sources. Be sure to check *The Garden Shed* next month for an article on growing great garlic.

September is an excellent time to **sow cover crops** in bare areas of your garden. See our article on cover crops in this month's issue of *The Garden Shed.*

Give your **tomato** plants one last feeding. Compost tea or fish emulsion should give them the extra energy they need to make that final push at the end of the season. Pinching off small green tomatoes and any new flowers will channel the plant's energy into ripening the remaining full-size fruit.

Plant some **cool-season vegetables** such as radishes, spinach, kale, mustard and collards.

Collect herbs from your herb garden for freezing and drying. If you don't have access to a dehydrator, herbs can be dried quickly in a microwave oven. Simply place the herbs between two paper towels and heat for a minute. Remove them from the oven, cool, then test to see if the leaves are crisp. If not, return them to the microwave for a few more seconds. Store in sealed jars in a dark place so they will keep their color and flavor.

Remove any diseased plants from the garden and burn them or bag and dispose of them to prevent spreading disease to future plants. Only **compost healthy plants**.

Take a tour of your own vegetable garden and make notes on this year's varieties, successes, challenges and chores so that you can learn for next year. Make a sketch of your plants to be used next spring for rotating your crops.

Continue to weed your garden to prevent the weeds from going to seed and germinating over the winter and spring.

Remove all 2 year-old canes from raspberry and blackberry plants to reduce overwintering of disease. Fertilizers containing potassium, phosphorus and magnesium or calcium can be applied but do not cultivate or irrigate at this time of the year.

Keep the strawberry patch weed free. Every weed you pull will help making weeding easier next spring.

Even before fall arrives, we gardeners are already planning for next spring!

Thanks for joining us in *The Garden Shed*, hope to see you again next month!

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Goldenrod

By Patsy Chadwick | September 2015 - Vol.1 No. 9

Goldenrod — is it a weed? Or is it a beloved wild flower? Depending on who you talk to, perhaps it's both. This native North American plant grows in one form or another in every state in the contiguous United States and in Alaska. In fact, it's so common that it's understandable why many people think of it strictly as a weed. But what a weed! Goldenrod is an important source of nectar and pollen for pollinators of all kinds as well as shelter for the larvae of beneficial insects. This bee and butterfly magnet tolerates two of our region's gardening challenges — deer and clay soil.

Here, in this part of Virginia, the Albemarle County Native Plant Database lists seven varieties of goldenrod that are native to this area. These are only a few of the approximately 38 varieties that are native to Virginia. Depending on the variety, they start appearing in the landscape as early as July and bloom until November. They're hard to miss. Most varieties of goldenrod range in height and width from three to four feet on average. While Rough-Stemmed Goldenrod is fairly diminutive at 2 feet in height, its relative, Sweet Goldenrod, can reach 5 feet. Taller yet, Canada Goldenrod can reach 6 feet in height while the tallest of the bunch, Giant Goldenrod, can climb to 8.2 feet in height, according to the United States Department of Agriculture plant database. For an idea of just how tall this plant is, check out the accompanying photo of Piedmont Master Gardener Dorothy Tompkins standing next to a clump of it in her garden.

Commonly seen growing in fields and along country roads, this wild flower has long been ignored by serious gardeners until recent years. With the introduction of hybrid forms of the plant, which are smaller and better behaved, Goldenrod often appears in home gardens as well as in public botanical gardens. A member of the *Solidago* genus (pronounced sole-ih-DAY-go), goldenrod is commonly used in European gardens more so than in North American gardens. As Allan M. Armitage points out in his *Herbaceous Perennial Plants, A Treatise on their Identification, Culture, and Garden Attributes (Third Edition)*, Europeans developed goldenrod hybrids for the commercial cut flower market using North American natives as parents. However, as American gardeners become more interested in native plantings, goldenrod is now viewed less as a weed and more as a wild flower worthy of consideration in the ornamental garden. Of the more than 100 species of goldenrod within the *Solidago* genus, most of the commonly grown ones have feathery, branching clusters of brilliant yellow flowers which dance in the breeze and add movement to the landscape.

Giant Goldenrod
Photo Credit: Pat Chadwick

Many garden centers in the mid-Atlantic offer *Solidago rugosa* 'Fireworks' as a staple of the autumn perennial trade. 'Fireworks' features generous plumes of small, bright yellow flowers that grow in dense panicles at the ends of stiff alternate-leaved stems. It blooms from September to October in full sun and ranges in height from 36 to 42 inches. While it does well in average, well-drained soil, it can tolerate wetter soil than other Goldenrod cultivars, which makes it a good candidate for rain gardens. Deadheading the spent flower clusters encourages additional bloom. 'Fireworks' produces some creeping roots. If the plant spreads beyond the space allotted to it, don't despair. The excess pulls up very easily. To control growth, divide the plant every two to three years. If you're not familiar with 'Fireworks,' take note of a beautiful clump of it growing on the grounds of the Jefferson-Madison Library branch on Gordon Street in Charlottesville.

Another popular cultivar is 'Golden Fleece,' which blooms from August through September. This East Coast native goldenrod (*Solidago sphaecelata*) is more diminutive than the species, topping out at about 20 inches and spreading to about 3 feet.

Goldenrod is susceptible to rust, which is characterized by bronze pustules on stems and lower sides of leaves. To either minimize or avoid the problem, make sure the plant has plenty of air circulation and is sited in full sun. While it will tolerate some shade, it can become floppy and may need to be staked.

Many people believe goldenrod is the source of autumn hay fever and allergy symptoms. You'll be relieved to know that this is not the case. The pollen of goldenrod is sticky and is not wind borne. The true cause of those fall sniffles and sneezes is the wind-borne pollen of plants such as ragweed.

While some people categorize goldenrod as a weed, many of us regard it is a beloved wild flower. The state of Kentucky, for example, likes it well enough that it named *Solidago altissima* as its state flower in 1926. This is just one of 30 species of goldenrod that grace the Kentucky fields and byways. Another species of goldenrod, *Solidago gigantea,* or giant goldenrod, has been the state flower of Nebraska since 1895.

RESOURCES

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The Ornamental Garden in September

By Patsy Chadwick | September 2015 - Vol.1 No. 9

It's September – a magical time of year when the late afternoon sun casts a golden glow over the entire landscape. The air, though still warm, feels cooler following the dog days of summer and the days are growing noticeably shorter. As temperatures begin to cool down, it's time to swing into action to prepare the ornamental garden for the transition into autumn.

Many annuals, such as petunias, marigolds and zinnias, start to look leggy, floppy, or just plain tired by September. **Begin your fall garden cleanup** by removing spent annuals and composting them unless, of course, they are diseased, in which case, they should go straight into the trash.

Other annuals, such as begonias, coleus, geraniums and lantana, should still be going strong. To keep the floral show going for as long as possible, **protect tender plants** such as these when night-time temperatures turn chilly.

If you're thinking about digging up some of your annuals and bringing them indoors for the winter, don't do it! They're not likely to survive the transition indoors. You'll have far better success if you take **stem cuttings** and root them in pots. Give them a sunny spot on a window sill or other suitable well-lit place so that you can enjoy them indoors this winter. Then, next spring, you will be able to return the plants to the garden.

Do you love **early-blooming annuals,** such as larkspur, love-in-a-mist (*Nigella*), snapdragons, and calendula? These plants like cool growing conditions. Try direct sowing the seeds in the fall rather than next spring.

Begin to **prepare your houseplants** for the return indoors. Day-time temperatures may still feel hot to you, especially during the first half of the month, but nights will be noticeably cooler. When night-time temperatures begin to fall into the 50s, move house plants indoors. To prepare for the transition, move your house plants to a shady spot about 2 weeks in advance so that they get used to lower light levels. Remember – you gradually acclimated your plants for their transition to the sunny outdoors this spring. Now you need to reverse the process.

Before you bring those potted plants indoors, thoroughly inspect them for insects. **Scale, white fly, mealy bugs and fungus gnats** are just some of the beasties that may catch a ride indoors on your plants.

One last thought on house plants. Thoroughly **wipe down all potted plant containers** to remove dirt, debris, spider webs, and insect eggs or larvae. Inspect the bottoms of containers as well as the bottoms of saucers for insects that may be hiding there. Those are ideal places for spiders to hide as well as stash their egg cases.

Early fall is an ideal time to **divide and transplant spring-flowering plants**. Many perennials, such as daylilies, garden phlox, irises, and oriental poppies, should be divided every three to four years. Pick a cool day for this task. As you divide plants and transplant them, water them well and continue to keep them watered so that they become well established in the garden before the onset of winter.

September or early October is **the ideal time to divide or move peonies** so that they become well established before winter. Peony tubers are very fragile, so be particularly careful to keep the root mass as

intact as possible. Space the plants at least three feet apart. This is important: Plant the roots so that the buds are only about one to two inches below the soil surface. If you plant them deeper, they will not bloom.

Fall is traditionally the best time of year to **plant new trees and shrubs** in the landscape. To give those woody ornamentals the best possible chance for success, keep them well watered throughout the fall. Inadequate moisture can stress the plant making it more susceptible to winter damage. Don't rely on rainfall alone to maintain adequate moisture levels. To help hold in moisture as well as moderate the soil temperature, spread a three-inch layer of mulch over the rootball area after it has been well watered. Be careful not to pile mulch against the plant's stem or trunk.

As you plan ahead for next year's spring garden, expand your horizons and experiment with bulbs other than daffodils and tulips. **Invest in early-blooming bulbs** such as snowdrops, crocus, scilla, dwarf early-blooming iris, winter aconite, narcissus, glory-of-the-snow, and other easy-to-naturalize hardy bulbs for planting this fall. A naturalized display of blue grape hyacinths (*Muscari*), for example, can be stunning in the early spring. As extra incentive for you to plant these early bloomers, deer, voles, and other pesky critters generally do not bother them.

Note for next season's garden: If you're not already doing this, try incorporating more **native plants** into your late summer/early fall garden. Try Joe Pye Weed, goldenrod (*Solidago*), asters, ironweed, and boltonia in sunny, well drained sites. All of these plants are butterfly magnets. For the shade garden, try turtlehead (*Chelone*), woodland aster (*Aster divaricatus*), or cardinal flower (*Lobelia cardinalis*).

September Lawn

By Melanie | September 2015 - Vol.1 No. 9

September is the perfect time to seed/reseed a lawn. Fortunately, this is not done yearly. It is also time to fertilize cool season grasses.

- Soil test if not done within the last 3 years
- Aerate lawn if compacted
- Mow as needed at height of 3-3 1/2″. OK to be slightly shorter so sun can get down to base of grass blades.
- Great time to lay sod
- Great time to reseed. Start by adding some compost. Pick certified seed and water frequently until germinated and then at least 1/2 inch every 2 or 3 days. Do not fertilize 2 weeks prior to seeding and 4 weeks after seeding even if means omitting one of the three applications. Do not mow until grass is 3 to 4 inches
- Fertilize lawn as indicated by the soil test. See feature article for more information.
- Measure lawn dimensions prior to fertilization.
- Use slow release fertilizer when possible
- Do not let fertilizer spread in a manner that falls on impervious surfaces such as sidewalks and driveways
- Avoid fertilizer application if weather report calls for heavy rain
- Return grass clippings to lawn
- As leaves fall, chop them finely with a mulching mower.
- Lime as indicated by soil test but no greater than 50 pounds/1000sq ft at one time.

Versatile Shaved Salads

By Cate Whittington | September 2015 - Vol.1 No. 9

“You have got to try their shaved salad!” my friend exclaimed. She was recommending one of Charlottesville’s new trendy restaurants.

Shaved salads are replacing ever-popular slaws and tossed greens on more and more menus. Choose whatever vegetables lend themselves to a shave. I used a mandoline, but the slicing blade of a food processor or a sharp knife will work just as well. You may welcome this new trend as an opportunity to savor the last of those prolific zucchini that still cling to the vine.

For the salad pictured here, I paired fennel and Brussels sprouts with green apple and a few currants to add a little sweetness. Sprinkled with sliced almonds, this raw, crunchy side dish made the perfect accompaniment to a light supper of grilled salmon and roasted new potatoes.

While a squirt of lemon juice and a little olive oil may suffice, I whisked together the following dressing and lightly tossed it over the shaved fennel (1 bulb) and sprouts (1/3 pound, dark bitter outer leaves removed) just before serving:

2 tsp. Dijon mustard

1 shallot, minced

1 tbs honey

Salt and pepper to taste

3 Tbs. cider vinegar

juice and zest of ½ lemon

4 Tbs. olive oil

For variety, try one of the following combinations with shaved fennel and sprouts:

- Capers and chopped hard-boiled egg
- Orange slices, black olives, and mint
- Pancetta or crumbled bacon with shaved Parmesan
- Hazelnuts or pine nuts with feta cheese