Feature

Soil Preparation

By Shaw Banks

This is the time when many gardeners or wannabe gardeners begin thinking about preparing the soil for the new garden space. It doesn’t matter if the garden will be a vegetable garden, flower garden, or shrub bed. The soil still needs to be prepared properly to give the plants their best start. Here are four steps to good soil preparation.

Step 1 – Test the soil. Very few people can tell what the soil is like by simply looking at it. The North Carolina Department of Agriculture and Consumer Services (NCDA&CS) has a soil test lab in Raleigh where soil can be sent to test for the basics in plant growth. They test for the major nutrients available in the soil; the pH or acidity; the ability of the soil to hold onto nutrients; and several other factors.

To take a proper soil sample for testing a plastic bucket and a hand trowel will be the tools needed. With the hand trowel, dig a hole about 8 to 10 inches deep. Take a slice about ¼ inch thick down one side of the hole and place this in the bucket. Fill the hole back in with the soil that was removed to create the hole. Do this in 8 to 12 different spots in the area where the garden will be located.

Mixing the 8 to 12 samples in the bucket will provide a representative sample of the soil in the area. About 1-½ cups of soil will be needed to fill the soil test box.

Before filling the box, fill out the name, address and soil identification number information on the box. The identification number is something that is created by the person taking the soil sample that will help them remember the area where the soil was tested. For example, if the sample was for a vegetable garden the identification number may be something like V-E-G-1. Fill in the information from the soil test form including the name, address, soil identification number, lime applied in the past 12 months, crop to be planted, and crop code. Codes for different crops can be found on the back of the form. Use the numbers in the lower left corner to get fertilizer and lime results in pounds per 1000 square feet.

Soil test results may take several weeks to come back, so send that soil sample in a month or two before planting time.
Step 2 – Loosen the soil. If the ground has not been worked in a few years, it will most likely be very hard. A tiller may be needed for large areas, but for small areas a shovel and possibly a pick will be all that is needed. Loosen the soil in the entire bed area to a depth of 6 to 10 inches. The deeper you can loosen the soil the better.

Step 3 – Amend the soil. The soil test report will give information such as the amount of lime needed to bring the pH up to the desired level for good plant growth and the amount of Phosphorus and Potassium (the second and third numbers on the fertilizer bag) needed for good plant growth. Evenly distribute these items over the garden area. Top this off with a 2 to 4 inch layer of compost. The compost will loosen heavy clay soils, allowing water to penetrate down into the root zone or increase the amount of moisture the soil will hold in a loose sandy soil. As the compost continues to break down it releases nutrients the plants can take up. Mix the soil again to incorporate the amendments throughout the soil profile.

Step 4 – Wait. Allow the soil to settle for a week or two before planting. This step removes some of the large air pockets that allow plant roots to dry out.

Preparing the soil properly will give the plants the best start possible. It is some backbreaking work to get this done, but the resulting plant growth will be more than worth the effort.

**Featured Plant**

**Genus Helleborus**

By Tina Stricklen

Hellebores, in my opinion, are some of the most under-utilized yet most rewarding perennials on the market. Originating from far-flung regions of Europe, it is understandable why many of us are not familiar with these nearly evergreen perennials. Granted part of the reason they are not employed in our gardens correlates to availability but many local growers have kyboshed that notion, particularly in the last decade.

This Zone 4 through 9 plants have many wonderful attributes, not the least of which is they bloom during the late winter/early spring when not much else is happening in the garden. These stalwarts of the wintertime garden have a nodding bloom habit so it is preferred to plant them on a hillside. They require some light in order to bloom their best so dappled light is a must. Some sources indicate they will bloom in full sun but I personally have not tested that possibility.

Another key to successful hellebore cultivation is good drainage. This is not to say your soil preparation should consist of sand, soil conditioner, topsoil, compost and small pebbles. I did that and lost many prized selections during the drought of 2007. What I mean to say is make sure the plants have good drainage but not so sharp that water runs off before it’s absorbed. Since I planted mine in a woodland area, I placed the mixture on top of the ground. This created a mound allowing room for their roots to grow. (I dislike digging large holes in the woods because of all the roots!)

Like many plants, once established, they are drought resistant and perform well in dry shade. Many types will drop their seeds, creating little seedlings resulting in naturalized areas around the parent plant. Did I mention hellebores are deer...
resistant? For many gardeners this fact alone is reason enough to start a collection immediately.

Listed below are the standard types found in today’s nursery trade; however, hybridizing and breeding programs have produced many hybrids:

- Helleborus foetidus (Bear Claw hellebore)
- Helleborus orientalis (Lenten Rose)
- Helleborus niger (Christmas Rose or black hellebore)
- Helleborus argutifolius (Corsican hellebore)

Resources:


### Upcoming Events

**The Sustainable Muscadine Vineyard**
Saturday, February 12 beginning at 10am at Johnston County Agriculture Center; Please call 989-5380 or e-mail shawn_banks@ncsu.edu to preregister or for more information.

**Blueberry Pruning Workshop**
February 19th, 2011 @ 9:00 AM - 12:00 PM Goldsboro, NC Call Diane at 919-731-1525 to register.

**Tree and Shrub Pruning Workshop**
Saturday, February 26 beginning at 10:00am at the Johnston County Agriculture Center please call 989-5380 or e-mail shawn_banks@ncsu.edu to preregister or for more information.

**Events at Johnston Community College:** call 919 209-2052 or 919 209-2184 to register for these events. These events have a $15 registration fee unless otherwise noted.

- **February 2 @ 6:30pm** The ABCs of Gardening
- **February 9 @ 2:00pm-4:00 Site Analysis and Flower Power (Annuals, Perennials, Biennials)**
- **February 16 @ 6:30pm** Sustainable Garden Design - Choosing a Theme for your Garden(s)
- **February 23 @ 6:30pm** Vegetable Gardening
- **March 15 @ 6:30pm** Tomato Grafting Workshop

This workshop has a cost of $30 to cover the cost of materials. Participants will take home some grafted tomatoes on bacterial wilt resistant rootstock.

**2011 Wilson Garden Tour** May 6th, 2011 @ 10:00 AM - May 7th, 2011 @ 4:00 PM. Contact Lisa Newkirk at (919) 739-693 to purchase tickets.

**Yard Villains**

**Soil pH Problems**
By Shawn Banks

The pH of soil is constantly changing. Soil pH is a measure of the amount of Hydrogen (H⁺) in the soil solution. When organic matter such as dead plants, compost and even mulch break down in the soil they release more Hydrogen into the soil solution, decreasing the soil pH. Rain tends to be acidic in nature, also lowering the soil pH.

Soils in North Carolina naturally tend to be slightly acidic. Most plants like to have a slightly acidic soil with a pH around 6.0 to 6.5. Soils with a pH of 7.0 are neutral and those with a pH above 7.0 would be considered alkaline.

Soil pH affects the availability of nutrients in the soil. As the soil pH drops below 5.0, nutrients such as nitrogen (used to produce green leaves), phosphorus (used to produce strong roots and beautiful flowers) and calcium (used in cell wall production throughout the plant) become less available in the soil solution. Problems begin showing up in the form of yellowing leaves and other symptoms of plant stress.

Adding lime to the soil will increase the soil pH. The question becomes, “how much lime is needed?” A complicated formula which includes
the soil type, the Cation Exchange Capacity (CEC), the target pH, and the crop to be grown is used by the soil test lab run by North Carolina Department of Agriculture and Consumer Services to make a recommendation of how much lime is needed.

Correcting the soil pH to the desired range can dramatically improve the health of the plant or crop being grown. The best way to adjust the soil pH is to incorporate the lime into the soil. If that’s not possible as in the case of established plants, never apply more than 50 pounds of lime per 1,000 square feet at any given time. If the recommendation from the soil test lab is for more than 50 pounds per 1,000 square feet, split the application and wait 6 months between applications.

It’s amazing how many problems simply adjusting the soil pH can solve.

What’s in Season?
Arugula or Rocket
*Eruca sativa*

By Shawn Banks

Here is a leafy green with a little something extra. The leaves of this annual plant are dark green with a lobbed margin. Unlike most lettuce this leaf has a little peppery bite. Add leaves of arugula to a salad and no extra pepper will be needed to add flavor.

Arugula is a cool season leafy green that is ready to harvest in about 30 to 40 days from planting the seed. The leaves are best when harvested tender, before they begin to develop hairs on the underside. If the leaves get too old they become tough and bitter. Harvest the older leaves from the base of the plant leaving the upper leaves to continue to grow and produce. Planting new seeds every 7 to 10 days will provide more greens to harvest week after week.

As the weather warms this fast growing plant begins to bolt (send up a flowering stalk). The flowers are also edible as are the seeds, which have been used to flavor oils. Save a few seeds from one year to the next and you will only need to purchase seeds once.

Storing arugula is the same as any other green. Once the leaves have been harvested, wash them in cool water. Dry the leaves with a paper towel or salad spinner and wrap them in plastic or place them in a plastic bag. Store them in the refrigerator for up to two days.

Eat this plain or mixed with other salad ingredients. It can also be cooked like spinach.

Recipe
Roasted-Carrot-Salad

Ingredients
- 2 pounds carrots, peeled and thinly sliced on the diagonal
- ½ cup slivered almonds
- 2 cloves garlic, minced
- ¼ cup extra-virgin olive oil
- salt and pepper to taste
- 1 teaspoon honey
- 1 Tablespoon cider vinegar
- 1/3 cup dried cranberries
- 1 (4 ounce) package crumbled Danish blue cheese
- 2 cups arugula

Directions
1. Preheat an oven to 400 degrees F (200 degrees C).
2. Combine the carrots, almonds, and garlic in a mixing bowl. Drizzle with the olive oil, then season to taste with salt and pepper. Spread out onto an ungreased baking sheet.
3. Bake the carrots in the preheated oven until soft and edges turn brown, about 30 minutes. Remove and allow to cool to room temperature.
4. Once cool, return the carrots to the mixing bowl, and drizzle with honey and vinegar; toss until coated. Add the cranberries and blue cheese; toss again until evenly mixed. Combine with arugula and serve immediately.

Recipe copied from allrecipes.com.  

Garden Interests

Calabrese Broccoli
by Karen Damari

The Romans prized early forms of sprouting broccoli; Pliny having described them in the 1st century C.E. (Common Era or Christian Era). Calabrese is a delicious Italian heirloom variety, introduced to France by Catherine de Medici in 1560. It arrived in the U.S. with Italian immigrants in the late 1800s. Calabrese (60 – 90 days) is famous for producing dozens of delicious side shoots after the main head is cut.

Calabrese is typically planted in early spring for summer harvest, growing best under cool, moist conditions with a soil pH of 5.5 – 7.2. Use floating row covers to provide some insect protection. Protection can also be gained with aromatic companion plantings of dill, celery, chamomile, sage, peppermint, oregano and rosemary.

Broccoli is a nutritional powerhouse chock full of vitamins A, B and C, potassium, phosphorus and iron, with moderate amounts of protein and calcium.

February Garden Tasks

Lawn Care

- Cool season grasses should be fertilized mid-month. If a soil sample has not been taken, use a fertilizer of at least 30% slow release Nitrogen at the rate of 1 pound of nitrogen per 1000 square feet.
- Crabgrass usually will start to germinate about the same time the Forsythia blooms. If you have had problems with crabgrass in the past, then you may want to apply crabgrass preventer when the Forsythia blooms.
- Pulling wild onion/wild garlic is the best way to get rid of these pesky bulbs, but make sure you get the bulb. If there are too many to pull, a product with 2,4-D works well to help control this weed. Be sure to follow the manufactures directions found on the label. Complete control may take two or more years. Apply 2,4-D at half the recommended rate on centipede lawns otherwise it will damage the grass.
- For more tips on lawn care visit Turf Files on the Internet.

Trees, Shrubs, and Ornamentals

- Cut back dormant ornamental grasses before new growth starts to about 10 to 14 inches above the soil. Evergreen ornamental grasses (or grass like ornamentals) such as Liriope and Mondo Grass should be cut short or mowed to remove last year’s unsightly foliage. If the clumps have become too big for the area they can be divided and shared with friends or planted in other areas of the yard.
• Summer blooming shrubs bloom on new growth so they can be pruned hard in February to encourage new growth and many flowers. Examples include Abelia, Hibiscus, Hydrangea, Beautyberry, Butterfly bush, Althea, Rose of Sharon, and bush or Tea Roses. **Shrub Pruning Calendar**

• Spring blooming shrubs such as Azaleas, Rhododendrons, Forsythia, Spirea, Quince, Weigela, and Climbing Roses bloom on last years growth and should not be pruned until after they have flowered.

• **Deciduous trees** especially those that bloom in the spring should not be pruned this time of the year. Examples being Dogwoods, Red Buds, Maples and several others.

• For many evergreens this is the best time of the year to prune if they haven't been pruned already. **Evergreen Pruning Calendar**

• Summer blooming roses can be pruned this time of the year. Remember not to remove more than 1/3 of the growth. Remove old mulch and leaves from around plants, this removes many overwintering fungal spores. Put down fresh mulch.

• Bare root roses and trees can be planted this time of the year. Soak the roots overnight to rehydrate them before planting.

• Spring flowers such as Sweet Williams, Pansy, Viola, Calendula, Forget-Me-Nots, English Daisies, Poppy, Alyssum and Dianthus can be planted now. Don't forget to deadhead pansies and fertilize toward the end of the month.

**Edibles**

• Asparagus crowns can be planted now through March.

• Transplant cabbage, broccoli, and cauliflower out into the garden.

• Strawberry plants can be planted now for spring fruits.

• Beats, carrots, peas, lettuce, mustard, radish, spinach, irish potatoes, and turnips can be sown outside.

• Starting seeds indoors is easy and economical. Sometimes it is the only way to get the color or variety of the plants you want to grow. It is not necessary to use "grow lights", ordinary florescent tubes will usually be enough. For more information you can read the pamphlet "Starting Plants from Seeds", it is on the web at [http://www.ces.ncsu.edu/depts/hort/hil/hil-8703.html](http://www.ces.ncsu.edu/depts/hort/hil/hil-8703.html)

• February and March are good months to prune fruit trees.

• It is time to start a spray program for peach trees to control the many diseases and insects that attack peaches.

**Insects**

• Control overwintering insects such as scale and their eggs by hand picking or using a dormant oil spray (also know as horticultural oil ). Be sure to check for scales before spraying and follow the manufactures directions when applying any pesticide. Do not apply dormant oils to broadleaf evergreens when freezing temperatures are expected.

• Cool-weather mites are not visible to the naked eye. Junipers and other needled evergreens are a favorite hang out these mites. If you had some of these plants that were an unsightly brown last year, check them with a hand held magnifying glass to see if cool season mites are to blame. Horticultural oil or other registered insecticides can improve their situation and appearance.

**Houseplants**

• Even houseplants need a little rest once in a while, and this is a good time to give them a rest. Keep them watered but
give them a break from the fertilizer as most houseplants don’t do much growing during the short days of winter.

• Turn and prune houseplants regularly to keep them shapely. Pinch back new growth to promote busy plants.

• While this may sound extremely silly, your houseplants will thank you for it. When dusting the furniture, also dust the plants. Wipe dust from broad-leaf plants at regular intervals using a cloth dampened with clean water. If the plant has small leaves, consider placing several in the shower to wash the dust off.

• Keep an eye open for pest on indoor plants. Most can be treated with insecticidal soaps.