

December 2012



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Improving Your Garden Soil

by *Craig Mauney, Horticulture Agent*

There is really no cookbook recipe for improving your garden soil. Every situation is different so what works for one soil type may not work for another. Improving the structure of the soil is one of the most important aspects of soil care. Adding organic matter to the soil is the most effective way to accomplish building up structure. Organic matter has many benefits when you add it to your garden soil such as adding nutrients and maintaining pH. What is good topsoil? Well it is relatively dark in color, has active microorganisms, plant nutrients, organic matter and has a pH of between 5.5 and 7.5 for most non-acid loving plants.

Soil Structure – As organic matter decomposes, the structure of the soil is made more granular and crumbly. The soil will absorb moisture that would otherwise run off and cause erosion. A soil that is granular and crumbly will provide channels that water and air can filter down into. A soil with a hard surface is more subject to run off. Adding organic matter to your soil will make sure you have a continuous food source for the beneficial soil organisms. Even though incorporating organic matter will aid in sustaining the organic matter content of the soil, organic matter cannot be built up permanently because it continually decomposes and disappears. Therefore, improving the soil with organic matter must be a continual process.

Test Your Soil – The first step in soil improvement is to have your soil tested for nutrient levels and pH. Even though

the soil test and report comes from the North Carolina Department of Agriculture, Forsyth Cooperative Extension keeps extra soil test information sheets and boxes in our office for the convenience of our clientele. We will also help to interpret the test once you get a notification by the North Carolina Department of Agriculture that your report is ready. The soil test will tell you if you need lime or nutrients.



Add Organic Matter – Adding organic matter will improve the soil structure. Organic matter is added in the form of compost, cover crops or yard waste, usually in the urban setting. Some examples of yard waste are shredded leaves, crop residues from the garden, manure, straw, or grass clippings. It is best to add these materials in the fall of the year and allow them to decompose

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through the fall and winter months. Otherwise it is better to take these waste products and compost them for adding in the spring.

Cover and Green Manure Crops – A cover crop, like rye grain, is a seasonal planting, usually done in the fall, which protects the soil and adds organic matter. Cover crops help to retain the soil, reduce erosion and the impact of precipitation on the garden by slowing the runoff of water. They also reduce mineral leaching and compaction, and suppress perennial and winter annual

weed growth. A cover crop is usually left until the growth cycle is complete and a green manure crop is turned under once there is sufficient top growth. The cover crop's root system also provides organic matter and opens pathways that help improve air and water movement in the soil.

For more information on selection, planting, cultural practices and environmental quality, stop by the Forsyth Cooperative Extension Office at 1450 Fairchild Road, Winston-Salem, NC 27105. We have a wonderful demonstration garden you can visit when you stop by.

Leeks *by Derek Morris, Horticulture Technician*



Leeks are a much underutilized vegetable that should be planted a lot more in piedmont gardens. Why these vegetables in the onion family are not more commonly grown is a mystery to me. For one thing leeks are one of the few vegetables that can be freshly harvested throughout the winter. The winter cold with its freezing rain, snow, and ice does not harm leeks in the least. There are very few vegetables that this can be said of.

Leeks are best started from seed in January in a sunny window or if you are lucky a greenhouse. They could also be started in a cold frame. They should germinate in about a week and should be grown on where it does not get too hot. Keep in mind that leeks being in the onion family are a cool weather crop. They like the same growing conditions as onions and other cool weather crops. Seedlings can be grown on and planted in the garden around the end of February or anytime in March. To get the most from each plant it is best to place your transplants in a trench that is at least 6 to 8 inches deep and gradually filled in as the plants grow. Space each leek about 6 inches apart in the trench. Once the trench has been completely filled in to ground level, soil can be gradually hilled up around the leeks as they grow. Doing this will ensure a long white shaft. If you decide not to hill soil up around them you can simply place a thick layer of straw up against the sides of the plant which will help keep down weeds and hold in moisture. Leeks are carefree but given a little extra care they will greatly reward you come autumn and winter.

Leeks are heavy feeders and respond to rich organic soils. Add lots of compost and well rotted manure if available before setting your transplants out in the late

winter. Dig this material in as deep as you can. Doing this in the fall prior to planting is an even better plan. Leeks will also grow best if planted in full sun and given an inch to two of water each week during the spring and summer. Feeding with a liquid fertilizer like fish emulsion or seaweed periodically throughout the summer will also boost their growth considerably.

Leeks are edible at any stage of growth and can even be pulled and eaten as scallions in the spring. Leeks have a flavor that is similar to onions but are richer and when cooked are creamier and more tender. In the kitchen they can be used as a stand in for onion. Their most popular use is in stews and soups and especially combined with potato as in leek and potato soup. Potato - leek soup is very popular in certain European and other countries and is well received by most who taste it for the first time.

One of the greatest things about having leeks in the garden is that they are harvested from the garden as needed. There is no rush to pull or store this crop and they will remain in good shape until next year's crop is up and growing.

Occasionally one might find leek transplants being sold in bundles as you would find onions but it is very simple and cheaper to grow them from seed and you will have a better selection of varieties. There are several varieties on the market and most are quite similar. 'American flag' is an old variety that will form very large leeks given good care, 'blue solaise' is another heirloom variety but this one originated in France and is noted for its blue/green leaves turning a purplish hue at the onset of freezing temperatures. All leeks have attractive blue/green strapped shaped leaves regardless of variety. Plan on adding leeks to next year's garden and I am betting you will be glad you did!

Keeping Garden Records *by Mary Jac Brennan, Extension Agent, Community Gardens*

Keeping garden records is an important step in successful community gardening. Whether the community garden is made up of individually leased plots or is a large shared plot, tracking the weather, cultural practices, and harvest totals from the garden can help you better understand the piece of ground you are gardening as well as to better plan for garden projects.

Historically, garden diaries and journals from the past have provided a wealth of information about what was grown and where, and who was growing it. As a community gardener, you have the opportunity to document an interesting moment in time when people are coming together in numbers never before seen in our county to grow food. It is only appropriate that we record this rich history as we continue what our forefathers and mothers did in the village of Bethabara. It is in Bethabara that the first community garden in the young American colonies was recorded. Today, Historic Bethabara Park is home to one of the ninety active community gardens in Forsyth County.

Garden record keeping is about horticulture, but also about people. People gardening together will benefit from hearing about the big picture of the garden's impact. It is constructive for the group to reflect on what has taken place over the course of the gardening season. With good records, gardeners are able to celebrate or commiserate in the results harvested from the garden. Having a record of your total harvest quantities as well as the number of volunteers or volunteer hours involved in the garden will add power to your grant requests. Many gardens include a requirement for donating a percentage of the harvest to a food pantry or people in the community who are in need. When you document the donations, your garden group is able to see a tangible act of impacting food insecurity in our county through community gardening.

Keeping a record of a garden planting plan will be useful as plans are made for next year's garden, whether it is a 4 by 8 bed or a large shared plot. Rotating crops is a key component in keeping the garden soil healthy and keeping disease and insect pests away. A three year rotation plan is accepted as a sustainable practice in community gardening. In general, do not plant vegetables from the same family in the same location for three years. This can be a challenge for small garden beds, but record keeping can provide the information you need to exercise good cultural practices.

The tools needed for record keeping are a common book with harvest sheets, a scale for weighing, writing

instruments and a dry place to keep the book for easy access by gardeners. If your garden has a storage shed for tools and supplies, create a record keeping area in the shed and educate the gardeners about the location and the importance of keeping records up to date. If a shed is not available, use a mailbox in the garden as a dry storage space for keeping track of the garden statistics, and to share garden news. Another option is to have a kiosk or dry bulletin board where information is posted and records can be kept.

Sharing your community garden's harvest totals with the Forsyth Cooperative Extension will help the Community Garden Resource Program measure the overall impacts of the extraordinary community garden movement in Forsyth County. Gardening together, we are making our mark on history, much like Forsyth County's residents from over two and a half centuries ago. It is our responsibility to keep good records of our gardening efforts as a measure of our community's response to the challenges of hunger and health.

As the year comes to a close and gardeners everywhere enjoy some rest and hopefully some of the garden harvest that was put by, use your time to reflect on what you accomplished in the garden. Analyze your garden notes and consider what you can do in the New Year to make your community garden more productive. You might want to take a class offered by Cooperative Extension, try some new crops in your garden, plan to connect with a food pantry for donating extra produce, participate in our Community Garden Resource program, request a community garden mentor or become a community garden mentor yourself. So you see, there is still much to be done in the garden, even in the winter. Work on your garden organization's roots this winter. Work with your garden leadership team to cultivate new volunteers or to invite new gardeners into the garden. Use the records kept to make effective plans for a productive and healthy community garden in 2013 and to tell the story that is uniquely your own.

Forsyth County 2012 Totals

**Total harvest of produce from gardens
- 104,000 pounds.**

**Total donations of harvest from gardens
- 20,000 pounds.**

Providing Wildlife Essentials in the Winter *by Wendi Hartup, Environmental Agent*

To truly thrive wildlife need the same basics that we do: food, water and shelter. We can utilize the following tips to benefit wild creatures.

- Add islands of vegetation with various layers of plant heights (groundcovers, perennials, shrubs and trees) for wildlife cover.
- Dead trees provide homes to over 400 species of birds, mammals, and amphibians. Leave dead trees standing or if safety hazard lay on ground for feeding and nesting.
- Birds need a dependable supply of fresh, clean water for drinking and bathing. Reliable natural pools are rare and birds will travel great distances to visit them. According to Cornell, the best birdbaths are shallow pools of water with a gentle slope where a bird could wade into the water. Products that work great are trashcan lids, saucer-type snow sleds, shallow pans or old frying pans. Also, placement in shade near trees or shrubs at ground level is key to comfort for your birds.
- In winter, fruits, seed and nuts are the main source of food for many wildlife. Although ornamentals like privet, autumn olive and others provide winter berries, they do not provide all the essential vitamins and carbs needed in bird diets (think of these invasive berries as donuts or dessert while our natives provide the complete meal of

steak and potatoes). In spring when the ground begins to thaw, birds will switch to earthworms and insects.

- Make a mix of Black-oil Sunflower, White Millet, and Thistle seeds with crushed corn for bird feeders.
- Pour melted peanut butter and bird seed over shrub branches or place strings of popcorn, cranberries or citrus fruit slices on tree branches at different heights.
- Hang peanut butter-packed pinecones or suet balls filled with seed.

It can also be as simple as leaving something that already exists in place so that the wildlife can continue living there.



Wait to deadhead plants until seeds are eaten.



Peanut butter, bird seed ball on a string

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