Improving Soil Health in Your Planting Beds

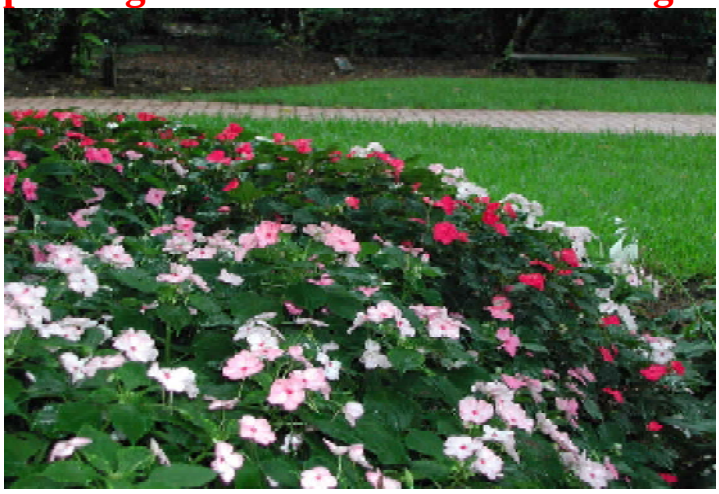

Photo by David W. Marshall, UF-IFAS Leon County Extension: It's not good to grow the same flower, such as these impatiens, in the same bed year after year. Rotate the type of plant.

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Do you have planting beds where nothing seems to grow well? You may find that even beds where plants grew well in the past may now not be doing so well. With repeated use, year after year, these beds may be suffering from declining soil health. This declining health is due to one or a combination of factors such as reduced soil organic matter, a buildup of soil-borne disease pathogens, increased nematode populations, and depleted minerals.

A look at the history of pioneer farm families reveals that this phenomenon has always been a concern. New land was cleared and crops were planted which typically performed well for the first few years. At some point, that acreage was deemed "used up" for that particular crop and more land was cleared for use. The term "new ground" remains a well known term in the agricultural community and describes the practice of moving to fresh, unused land for growing certain crops.

The specific reasons that the soil became less productive were not well understood at the time. It was just a fact of life. Now we know why repeatedly growing the same crop on the same piece of ground eventually leads to problems.

Gardeners nowadays have a better understanding of soils and the need to keep them healthy. A good soil is a living, breathing thing that is made up of minerals, organic matter, and many species of microbial flora and fauna. The key to keeping a good soil is maintaining an acceptable balance of fertility, organics, and microbes. The deep study of soils reveals many complex chemical and biological reactions. In a college seminar class, I was once required to present the path of carbon in photosynthesis. Just diagramming the reactions that take place required a poster that used the entire front wall of the room.

Maintaining soil health in the landscape fortunately does not require such in-depth study, but just a basic understanding and appreciation of the balance that is necessary. Following are some practical tips.

■ Practice rotation when using annuals – don't plant the same kind of flower or vegetable in the same place year after year. If possible, rotate plant families. Tomatoes, peppers, eggplant and Irish potatoes are in the same family, so consider them all one group when rotating. Likewise, cucumber, squash and melons are close relatives and susceptible to the build-up of similar soil diseases.
Vinca or periwinkle is another prime example of the need for rotation. The repeated use of this plant in the same beds has led to serious problems with a soil borne disease known as aerial blight.

■ Add and incorporate organic materials when between plantings. Peat moss, manures or compost can be used to improve the nutrient and moisture holding capacity as well as helping to keep a good balance of soil microbes. A single application of organic soil amendments is helpful, but does not have permanent effects. Make soil conditioning routine when preparing for each planting.

■ Beds that are not being used for a season can be greatly improved by planting a green manure or cover crop. During fall along the Gulf Coast , one of the small grains can be established as a green manure crop. Sow rye, wheats, or oats in a prepared bed and grow it until it reaches full size. It can then be mowed down and tilled into the soil while still green. Wait about a month after tilling it in so that soil microbes have time to do their decomposition. The area can then be planted with flowers or vegetables the following spring.

■ Even sandy soils become compacted and this is one of the most often overlooked soil problems. Deep tilling when beds are empty helps to break through compacted layers before replanting. Keep foot traffic in flower and vegetable beds to a minimum and use coarse mulches on the soil surface to prevent compaction that can be caused by hard rains.

For more local gardening information, visit the UF-IFAS website for Leon County at http://leon.ifas.ufl.edu/

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