Use Best Management Practices to Develop Healthy Soil

By Susan Camp

Expansive, manicured, turfgrass lawns have lost popularity in recent years, but most of us maintain a portion of our property as some type of green space, even it is only a strip next to the house or a small play area for the grandchildren.

It is a lot of work to maintain a lawn, and it is expensive to purchase seed, fertilizer, and herbicides. It is even more costly to hire a lawn service, so sometimes we just let grow in those areas whatever comes up, be it grass or weeds. When you mow it, it looks pretty good, and it's green. You would rather spend your time outdoors growing flowers and vegetables, right? I know I would.

If you are still a part of today's employment world, you probably hear a lot about best management practices (BMPs) at work. In business and health care, the term generally refers to tested and proven strategies that provide the best course of action to improve productivity in a specific situation.

Have you thought about applying best management practices to your lawn and gardens? You can, and there are numerous publications and websites that offer recommendations for improving soil health. Some articles contain technical terms, and you might feel you need an advanced degree in chemistry to interpret them and adapt the information to your plot of land, but many publications provide the information you need without overwhelming you with complex terms and formulas.

In order to develop healthy soil, we can use BMPs to prevent and combat erosion, improve soil structure, increase soil capacity to hold water and carbon, and increase soil biodiversity. See VCE Publication SPES-408P "Building Healthy Soil with Best Management Practices" for a brief overview of ways to use BMPs.

You can improve soil health by reducing tillage to minimize disturbance and help prevent erosion. Utilize plant residue to cover bare soil; this action will reduce surface crust development. Plant cover crops to increase water infiltration and add nutrients like nitrogen (N) to the soil. See VCE Cover Crop Fact Sheet Number One "Beneficial Uses of Cover Crops" for detailed information on this practice. Finally, provide diversity by rotating crops and using livestock to provide manure. A mobile chicken coop is an example of a way to energize the soil. Chickens scratch the soil, eat insects (good and bad), and leave manure to fertilize an area before the coop is moved to another site.

Consistent use of these practices will increase soil health over time, but the improvements won't occur in one season and may involve bypassing one BMP in order to implement another. Soil compaction, for example, is often the first and most frustrating problem a gardener will face. If the soil has crusted over into a dry, impermeable surface, there is little chance of breaking it up without some tilling. You may have to forego the "no tillage" practice in order to add compost,

manure, and plant residue for several years until the soil becomes friable. Cover crops planted in off-seasons are helpful, too. This prolonged process of breaking up compaction by adding organic material also adds nutrients to the soil and allows space for small insects and microorganisms to thrive and further improve soil health.

As gardeners, we despair of pesky insects like Japanese beetles and squash bugs, but we want to encourage pollinators and beneficial insects, spiders, birds, bats, amphibians, and reptiles (yes, they are our friends, too). The temptation is great to turn to broad-spectrum pesticides, but the use of such chemicals will destroy both wanted and unwanted garden denizens.

While you are trying to follow these best practices to build healthy soil, don't forget to rotate your crops. Besides providing protection for bare soil, crop rotation helps prevent pest populations from growing out of control and helps to balance soil nutrients.

PennState Extension Publication "Managing Soil Health: Concepts and Practices" offers detailed information on BMPs to improve soil health.