

The Community VOICE


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Reduce nutrient runoff by knowing your soil



By Christopher Harrod March 8, 2013 12:00 am

As the weather warms in the spring, a mix of perennial and annual plants in the garden begin to bloom, providing an array of colors contrasting with the gray of winter.

Grape vines break out of dormancy, and gardeners walk in limbo, deciding when to plant their first tomatoes to avoid Sonoma County's late spring frosts. This is also a time when most gardeners and farmers enrich the soil by applying fertilizers and compost. At the farm or at home, fertilizer can sometimes be essential but when applied excessively, it can cause nutrient runoff, damaging water quality and habitat. There are ways to avoid these environmental problems by taking responsible actions to promote soil health.

Applying too much fertilizer may cause nutrients to leach through the soil before the plant has a chance to use them. When this happens, the water-soluble nutrients such as nitrogen and phosphates get deposited into our water supply. This causes a process called eutrophication.

The higher nutrient levels in streams cause algae (that green stuff on the top of the water) to grow excessively. As this algae dies and decomposes (breaks down), it depletes the water of oxygen, causing the death of other organisms that can't survive on the low levels of oxygen. Eutrophication is a natural process but is often exaggerated by human influence.

For example, in the Florida Gulf, where the Mississippi River drains, there is commonly a large dead zone that has been growing in size, often in correlation with the use of chemical fertilizers.

Both humans and animals can be affected by high nitrogen in our water supply, causing birth defects and other health problems. There are ways to avoid polluting our waterways while providing an adequate amount of nutrients to plants at home and at the farm. The techniques include soil testing, adding compost, using plant-based fertilizers when needed and planting native trees and shrubs.

Testing your soil, whether you're a home gardener or farmer, is a great idea. Why? It can provide a detailed analysis of what nutrient levels your soil contains.

It will allow you to make better decisions about when to fertilize, what fertilizer to use and how much. Testing will help reduce runoff and your expenses on unneeded products.

In most gardens, fertilizer may not be necessary. The addition of compost and mulch will provide the plants with enough nutrients to thrive. Compost does its job by adding important nutrients and organic matter, while the mulch will help conserve moisture and eventually turn into compost. Some heavy feeding plants require large amounts of nutrients to keep production high. Tomatoes and peppers are heavy feeders and may need fertilizer added to the beds each year.

There are many choices when it comes to fertilizer. Walking through most garden centers, you'll often see fertilizers that are petroleum based, which take more energy to produce and are more prone to leaching into our water systems. There are some alternatives to these fertilizers such as cover crops, manures and plant based fertilizers, which often break down at a slower speed. These 'organic' soil amendments break down slowly to provide a gradual release of nutrients to the plants. These fertilizers have a lesser chance of getting into our water.

For our water to be cleaner and our energy used more efficiently, farms and gardeners should test their soils, rely less on petroleum-based fertilizers, add compost and mulch, and incorporate cover crops and plant and animal-based fertilizers when needed.

These healthy and more sustainable practices will allow our gardens and farms to thrive while having less negative impacts on soils, wildlife, and local and global water ecology.

Christopher Harrod is an environmentalist, horticulturalist, and novice mycologist. An SSU alumni who promotes the stewardship of our environment, he has served as an intern and is now a volunteer with the Cotati Creek Critters.

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