

How does your garden grow?



Fertilizer facts for healthy soil, healthy plants and healthy food

FAMILY FEATURES EDITORIAL SYNDICATE

Growing healthy, fresh vegetables in your backyard is easier said than done, right? Wrong.

Growing a bountiful garden is easier than you think. In fact, nearly half of the nation's homeowners grow vegetables for their dinner tables and to share with family and friends. Growing fresh vegetables for your family is as healthy as it is rewarding because the nutrients in vegetables provide vitamins and minerals that are essential to your good health.



Before you plant, test your soil

Most farmers perform a soil test every few years to ensure their fields have the right balance of nutrients to produce healthy, high-yield crops. Home gardeners should also test their soil before planting to determine whether the soil has the proper nutrient balance to support a garden.

While home growers may not have proper testing equipment handy in the garden shed, a local cooperative extension service agent will be able to provide advice on taking a soil sample and conducting a soil test.

"The best time to obtain a soil test is six weeks before planting," says Dr. Robert Flynn, extension agronomist with New Mexico State University's Agricultural Science Center at Artesia. "That will help you determine what nutrients you need to add to your soil, to keep your garden healthy."

Nourish your soil

Just as humans need vitamins to supplement their diets, soil needs fertilizer to help plants grow nutrient-rich produce. Fertilizers enrich soil with naturally occurring elements. Based on your soil test results, you can choose the perfect fertilizer for your soil conditions.

Organic matter, such as animal manure, contains many nutrients that plants need. However, organic materials alone seldom provide the proper balance of nutrients. Also, some organics have high levels of

carbon, which can temporarily tie up nitrogen in the soil, causing leaves to turn yellow.

"With organics, you don't always know the nutrient balance you're getting," says Flynn. "Commercial fertilizers are generally easier to use and allow for greater accuracy."

Commercial fertilizers are labeled with three numbers, which provide the proportion of nitrogen, phosphorus and potassium — the three essential elements for plant growth. For example, a bag of fertilizer labeled 8-8-8 contains 8 percent each of nitrogen, phosphorus and potassium.

When using organic fertilizers, high volumes of organic matter are required. For example, if an organic fertilizer has only 3 percent nitrogen and a commercial fertilizer has 21 percent nitrogen, you would need seven times the amount of organic fertilizer to meet the nutrient levels of commercial fertilizer.

"If you do decide to use organic material, keep in mind that it takes time to mineralize and become inorganic, a form plants can use, so timing of application is essential to ensure plants are provided with the proper nutrient balance when they need it most," says Flynn.

Plant therapy

Select a garden plot that receives full sunlight — a healthy garden needs at least six hours of sun each day. The garden should be large enough to accommodate spreading and growth.

Fertilizer should be applied to the garden bed one week before planting, by distributing the recommended amount of fertilizer evenly over the growing area.

Apply water-soluble fertilizer three to six weeks after planting, depending on what the fertilizer instructions recommend.

Fertilizer should be applied more frequently when the plant is growing rapidly. At this stage, plants are removing high levels of nutrients from the soil to sustain their growth. To keep plants healthy, monitor your nutrient levels and replace the nutrients removed from the soil as needed.

"Think of the soil as a nutrient reservoir," says Flynn. "Fill the reservoir as it empties until it is balanced. Perform a soil test each year, eventually your soil will reach a balanced state."

Beyond weeding and watering

Tips for long-term garden maintenance

Fertilizer trouble-shooting

It's not uncommon for soil to need a little pick-me-up later in the growing season as your vegetables remove nutrients from the soil to grow. Healthy, thriving plants will resist insects, outgrow weeds and produce nutrient-rich crops. If your plants aren't receiving the proper nutrients, you'll know it.

- A plant with yellow leaves may lack nitrogen.
- A low produce yield may be due to a nitrogen deficiency.
- A plant with stunted growth and late maturity may lack potassium and/or phosphorus.
- A plant with a scorched appearance on leaves may lack potassium.
- A plant with purplish-colored leaves may lack phosphorus.
- A plant with a bruised, rotted appearance may lack calcium.
- Fruit and vegetables that do not ripen on time may lack phosphorus.
- A plant prone to wilting, and which does not seem to absorb water efficiently, may lack potassium.

Long-term care

Want fresh veggies year after year? Keep these tips in mind for healthy produce each season:

- Perform a soil test annually until test levels reach medium high to high nutrient levels, to stock soil with the nutrients it needs.
- Rotate garden beds and plant positioning year after year. This will prevent disease build-up from affecting specific species.
- If you enjoy raising the same vegetables each year, grow a flowering plant, such as sweet peas, between crops. As growing the same plant will remove essential nutrients from the soil, rotate with a plant that requires different proportions of these nutrients.
- Plants requiring different nutrient levels can be placed together and can actually aid other plants, as they won't be competing for nutrients.

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