

*How to Fertilize the*

# EDIBLE GARDEN



Ag *for* Life



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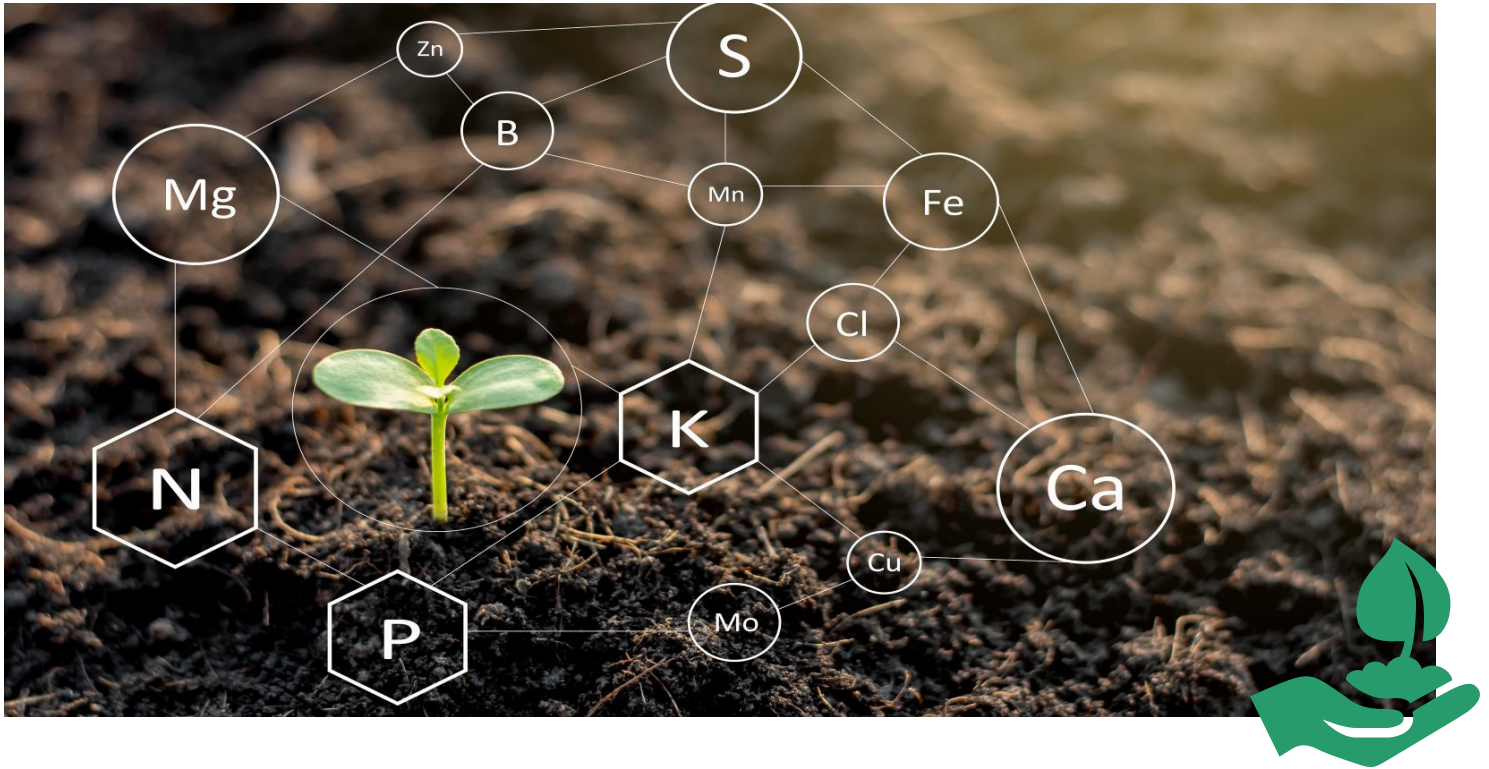


Plants need a variety of nutrients to live. They obtain these nutrients from the soil, taking them up with water via their root systems. If your soil is deficient in some of the nutrients plants need to thrive, you can help out by applying the nutrient-rich fertilizer that is required. The macronutrients nitrogen, phosphorus, and potassium must be supplied in greater amounts than other plant nutrients. Secondary nutrients include sulphur, calcium, and magnesium, while micronutrients such as zinc, chlorine, boron, iron, manganese, and molybdenum are needed in far lesser quantities.





# The Importance of Soil Testing



Sometimes it is fairly easy to get a sense of whether or not your soil is depleted. If you have been growing crops in the same place for several years and haven't added any supplemental nutrients, then it's likely time to do so. If the soil is frequently amended with organic matter from decomposed plants (such as fall leaves or incorporation of green manures), then you probably don't have to add anything extra.

A soil test can help you determine if your soil needs fertilizer – and what types to add. You can purchase a simple soil testing kit from your local garden centre, or you can hire the scientists at a soil laboratory to do the job. The lab will be able to provide more specific information than the inexpensive kits that you can buy and use yourself, and are particularly suitable if you are worried about environmental pollution or contamination in your garden site.



# Fertilizer Labeling

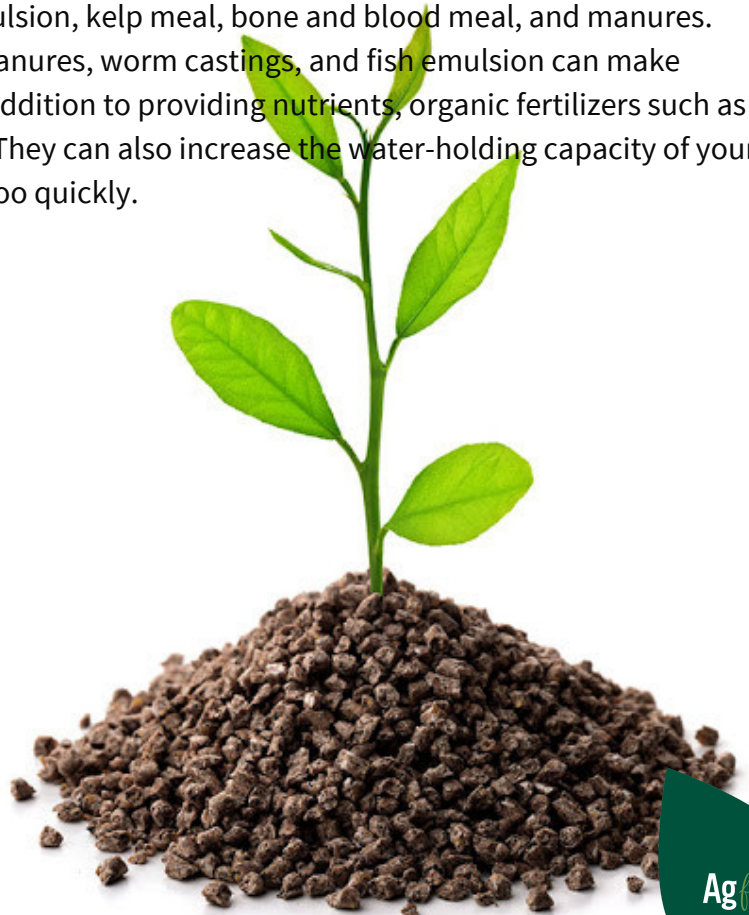


If you choose to purchase fertilizer from the garden centre, you'll usually see three numbers on the bag (sometimes you'll see up to five numbers, but generally, three is the standard). These numbers are percentages of the macronutrients nitrogen, phosphorus, and potassium per the total weight of the bag. So, if your bag says it has a nitrogen ratio of 10, that means that for a 20 pound bag, it has 2 pounds of nitrogen in it. The bag will usually give recommendation on rates of application, so that you do not over-fertilize your garden. It will require some mathematics but it's always a good idea to follow the guidelines. When fertilizing, it is unwise to follow the adage "more is better"! Too much fertilizer can potentially harm or even kill plants by burning the roots. Another problem that may arise comes with applying too much of one type of macronutrient – too much nitrogen, for example, can result in plenty of foliage but few flowers and fruit.

## Synthetic (Inorganic) and Organic Fertilizers – What is the Difference?

Synthetic fertilizers are refined and manufactured. They are often types of salts (for example, sodium chloride, potassium chloride, ammonium sulphate, or ammonium phosphate). One of the benefits with synthetic fertilizers is that they work quickly to provide nutrients to plants (unless you choose to purchase those that have been treated to be slow release). The downside of this is that they can easily burn plants if applied incorrectly.

Organic fertilizers are usually derived from plant matter or animal matter and excreta, and include compost, vermicompost (worm castings), fish emulsion, kelp meal, bone and blood meal, and manures. Some, such as compost, are slow release, while manures, worm castings, and fish emulsion can make nutrients available to plants relatively rapidly. In addition to providing nutrients, organic fertilizers such as compost can help improve soil texture over time. They can also increase the water-holding capacity of your soil, which can be a good thing if your soil drains too quickly.





# Application of Fertilizer

To prepare garden beds for planting, compost or other organic fertilizers may be added to the soil in the autumn, at the end of the growing season, or at the start of the growing season the following spring. You can choose to incorporate the fertilizer into the top inch or two of the soil or simply allow it to sit on the surface to be slowly drawn into the soil over time. Granular synthetic fertilizers may be broadcast onto the soil before planting time, as per the manufacturer's recommendations, and lightly incorporated.

If your plants need extra nutrients through the growing season, you can make supplemental applications of fertilizer. Many gardeners choose to apply granular synthetic fertilizers just before a rainfall so that the water helps the fertilizer reach the root zones of plants. Water it in if rain isn't in the forecast. If using a liquid fertilizer, make sure the soil isn't dry during application, as the risk of burning plant roots is increased. It is also not a good idea to apply fertilizer when it is very hot outside.



Remember that you need to maintain a consistent watering schedule for fertilizers to get to your plants and work! Plants growing in boggy soils or too dry soils will not respond well to applications of fertilizer. Do not fertilize the planting holes or trenches when sowing seeds or transplanting started plants. Seeds do not need fertilizer to germinate, and the roots of new transplants may be easily harmed by fertilizer at the time of planting, increasing the potential for transplant shock. Seedlings may be fertilized when they sport a minimum of two sets of true leaves, and you can wait a couple of weeks until new transplants establish themselves before adding fertilizer.

Do not use synthetic lawn fertilizer in your edible garden – chances are, it will have too much nitrogen and potentially create issues for your vegetables and fruit.

If you are growing perennial vegetables such as rhubarb or asparagus, you can side-dress the growing plants with a few handfuls of compost every spring. Established fruit trees and shrubs may receive the same treatment. There is no need to dig in the fertilizer. Tilling it in may disturb the roots.

Container-grown plants may need more frequent applications of fertilizer throughout the season, especially for plants that are heavy feeders, like tomatoes. Offer them a balanced synthetic fertilizer mixed at the manufacturer's rates every two to three weeks, or dress them with a handful of compost at least every month through the growing season.



