

What Do the Ingredients in NPK Do?

All of the three ingredients are essential to plant growth. Here's a brief look at what each nutrient contributes.

Nitrogen

Nitrogen, the first number referenced in an NPK sequence, plays a key role in a plant's coloring and chlorophyll production, making it an important factor in leaf development. Fertilizers high in nitrogen are often used for grass or other plants where green foliage growth is more important than flowering. At the opposite end of the spectrum, gardeners sometimes encounter the problem of nitrogen depletion—the yellowing of typically green plants often indicates a nitrogen deficiency.

Phosphorus

The middle number in an NPK series refers to the percentage of phosphorus in the fertilizer product. Phosphorus plays a key role in the growth of roots, blooming, and fruiting, which is why it is an essential nutrient for your plants in the spring. Phosphorus contributes to many fundamental plant processes, such as rooting and seed formation.

Potassium

The final number in the major ingredients listing gives the percentage of potassium in the product. Potassium contributes to the overall health and vigor of plants. It is known to help strengthen a plant's ability to resist disease, assist in the movement of water and nutrients in the plant, and can be especially important in areas that experience cold or dry weather.²

Other Ingredients

In addition to the major nutrients that are usually noted on the front label, most fertilizers also include additional ingredients that are listed on a side or back label. This may include other nutrients like calcium, magnesium, iron, micronutrients, and even the percentage of organic matter and fillers. Although the minerals and micronutrients are less critical than the major nutrients, a good fertilizer product will include small amounts of other ingredients as well.

Types of NPK Fertilizers

Balanced Fertilizers

A fertilizer listed as "10-10-10" is considered a balanced or "complete" fertilizer because its nitrogen, phosphorus, and potassium proportions are equal. Meanwhile, a fertilizer labeled "10-0-10" is an "incomplete fertilizer."

Incomplete Fertilizers

An incomplete fertilizer is not necessarily inferior to a complete fertilizer. Identifying the right fertilizer for your needs depends on a variety of circumstances. If your soil already has an excess of one of the three nutrients in NPK, you could be harming some of your plants by adding more of it to the soil—in this case, an incomplete or unbalanced fertilizer may be the right choice.

For this reason, it is important to test your soil before applying fertilizer. Otherwise, whenever you add anything to your soil, the effect (whether positive or negative) is left to chance.

