

What is fertilizer and what does it do?

In Kentucky, our law defines a fertilizer as, “Any substance containing one or more recognized plant nutrients which is used for its plant nutrient content and which is designed for use or claimed to have value in promoting plant growth except un-manipulated animal and vegetable manures, marl, limestone and wood ashes”. That’s a really complicated way of saying fertilizer is a substance that provides nutrients to growing plants.

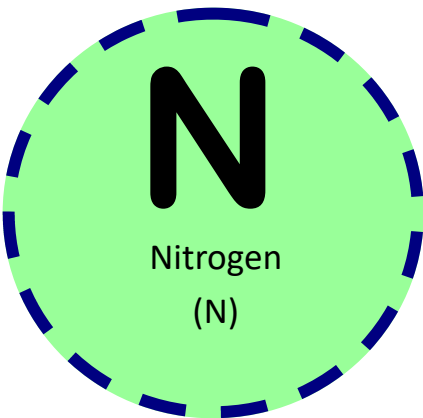
A plant generally requires several nutrients, or elements, to grow well and produce blooms and food. These elements are found naturally in soils in varying amounts. We enhance the outcome of the growth of plants by utilizing fertilizer that contains some or all of these nutrients to supplement what is found naturally occurring in the soil. This allows us to grow more food with greater yields, help yards to grow better and look more green, and it increase the blooms on flowering plants.

So, what are these nutrients, and what do they do?

Fertilizer can be made up of primary, secondary, and/or micronutrients. Not every fertilizer will contain all of the nutrients, but you can tell what a fertilizer does contain by looking at the grade and guaranteed analysis.

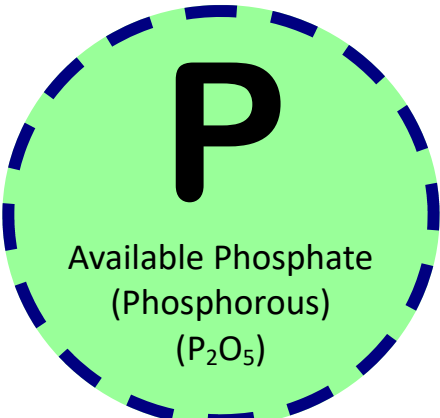
The grade of the fertilizer should be evident on the packaging of product and shows you the N,P,K value of the fertilizer. The guaranteed analysis is generally found on another area of the packaging and shows the guaranteed amounts of all of the nutrients that are in the product, including secondary and micro nutrients.

Primary Nutrients



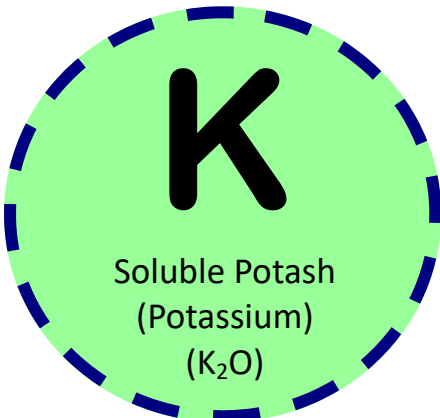
Nitrogen is considered the most important plant nutrient, it’s essential for developing proteins which are important building materials in all living things. Nitrogen is important for plants to develop properly and for them to be nutritional to us after they are harvested.

On the fertilizer label the amount of nitrogen in the product is represented by the first number in the grade.



Phosphorous, as available phosphate, is the nutrient that helps the plant to use and store energy (photosynthesis). It is also needed to help the plant grow and develop normally. Phosphate in commercial fertilizer comes from phosphate rock.

On the fertilizer label the amount of available phosphate is represented by the second number in the grade.



Potassium, as soluble potash, helps a plant resist diseases. It’s also important in helping increase the yield in crops and the quality of that yield. Potassium also helps to strengthen the root system and prevent wilt, and helps to protect the plant when the weather is cold or dry.

On the fertilizer label the amount of soluble potash is represented by the third number in the grade.

Secondary Nutrients



Calcium helps to strengthens plant structure and increase the fruit set of a plant.



Magnesium aids in the production of chlorophyll, it improves the utilization of phosphorous and increases the iron utilization in plants.



Sulfur is essential for the production of amino acids, the building blocks of living things.

Secondary nutrients are required in much smaller amounts than the primary nutrients. You will find the amounts of these nutrients in the product listed in the *guaranteed analysis*, right after the primary nutrient guarantees.

Micronutrients

Copper, Iron, Manganese, and Zinc*— These nutrients are needed in very small, “micro”, amounts. They very often work as activators of many plant functions. Copper helps improve flavors in fruits and vegetables, intensifies colors, has major function in reproductive stages and photosynthesis. Iron promotes formation of chlorophyll and acts as an oxygen carrier. Manganese aids in chlorophyll synthesis and regulates several important enzyme systems. Zinc helps the plant form proteins, starches and growth hormones.

The amount of micronutrients are required in much smaller amounts than primary and secondary nutrients. You can find the amount of these nutrients, if they are in the product, listed in the *guaranteed analysis*, right below the secondary nutrients.



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Please note: This information is not intended to explain fertilizer in depth, it is a quick summary of what fertilizer is and what the nutrients it contains does.
*The micronutrients listed are those you find most commonly in commercial fertilizers, and are not a complete list of micronutrients used in fertilizer.