

# NPK FERTILIZER:

What is it and How Does it Work?

NPK fertilizer provides the nutrition needed for **optimal plant growth**.

Plants could not survive without ONE of these **essential nutrients**.



Half of the global population can be attributed to the increased food production resulting from the use of **mineral fertilizers**.<sup>1</sup>

Soil lacking in nutrients requires them to be supplemented.

This is most often done in the form of **NPK fertilizer**.

## PRIMARY MACRONUTRIENTS

**N**

### NITROGEN

- Vital to chlorophyll for photosynthesis
- Significant component in amino acids, the building blocks of proteins
- Aids in the compounds that allow for energy storage and use

**P**

### PHOSPHORUS

- Aids in structural strength, crop quality, seed production, and more
- Encourages root growth and promotes blooming
- Essential in DNA
- Vital to the transformation of solar energy into usable compounds

**K**

### POTASSIUM

- Often referred to as the "quality element," for its contribution to size, shape, color, and taste
- Plants low in potassium are stunted in growth and have lower yields

### SOURCES OF N IN NPK BLENDS

#### INORGANIC

- Urea
- Urea Ammonium Nitrate (UAN)
- Anhydrous Ammonia

#### ORGANIC

- Manure
- Compost
- Blood Meal
- Feather Meal

### SOURCES OF P IN NPK BLENDS

#### INORGANIC

- Phosphate Rock
- Note: While all phosphorus comes from phosphate rock, phosphate rock is first processed into a variety of materials in order to blend and/or granulate it into various fertilizer products. This includes **phosphoric acid, MAP, DAP, SSP, and more.***

#### ORGANIC

- Manure
- Compost
- Biosolids
- Blood Meal
- Bone Meal

### SOURCES OF K IN NPK BLENDS

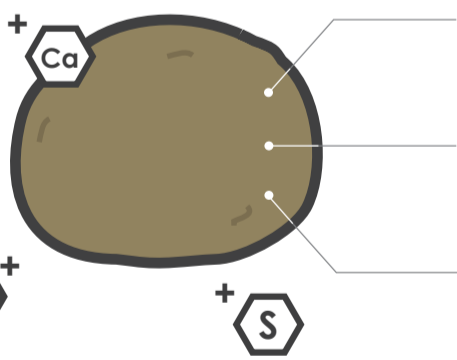
#### INORGANIC

- Potash/Potassium
- Langbeinite
- Granite Dust

#### ORGANIC

- Manure
- Compost
- Biosolids
- Wood Ash

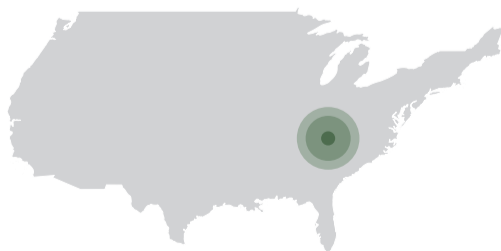
## GRANULAR NPK PRODUCTION



Components in NPK can be produced separately and "blended" to create the desired nutrient ratio/grade.

NPK fertilizer can also be produced to contain the desired nutrient ratio within each granule.

Production is flexible, allowing various additives to be included to create a **SPECIALTY FERTILIZER**, or formulations tailored to the needs of a specific region or application.



### VARIOUS PRODUCTION METHODS:



Pipe Reactor Granulation



Drum Granulation



Spheridizer Granulation



Prilling



Mixer-Dryer Granulation



Disc Pelletizing

## GRANULATION SOLUTIONS

FEECO has been a pioneer in the fertilizer industry since 1951, providing custom fertilizer equipment and process solutions to the fertilizer industry. No matter what your fertilizer needs, we can help, from feasibility testing and process development, to custom granulation equipment, and parts and service. *For more information, contact us today at [FEECO.com/contact](http://FEECO.com/contact)*