NPK FERTILIZER: What is it and How Does it Work?

NPK fertilizer provides the nutrition needed for optimal plant growth. Without one of these essential nutrients, plants could not survive. Soil lacking in nutrients requires them to be supplemented. Half of the global population can be attributed to the increased food production resulting from the use of mineral fertilizers.¹

**PRIMARY MACRONUTRIENTS**

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

**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

**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**
- Urea
- Urea Ammonium Nitrate (UAN)
- Ammonium Nitrate

**SOURCES OF P IN NPK BLENDS**
- Phosphate Rock
- Langbeinite
- Granite Dust

**SOURCES OF K IN NPK BLENDS**
- Manure
- Compost
- Blood Meal

**GRANULAR NPK PRODUCTION**

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
- Spherodizer Granulation
- Prilling
- Wet Grind Granulation
- Box Pelleting

Component 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.

¹ Source: IFDC (International Fertilizer Development Center), "Fertilizer Technology Development."