

What makes up today's fertilizer?

There are **three categories of ingredients** which make up fertilizer, 1. Macro-nutrients, which include the three main parts of fertilizer:

- A) Nitrogen is essential for the formation of vital proteins in all living things.
- B) Phosphorous is necessary for photosynthesis, the process plants use to convert sunlight to energy.
- C) Potassium also known as potash is essential for carbohydrates and starch synthesis and also helps plants resist wilting. 98% of the potassium in the soil is unavailable to plants, which requires the application of potash fertilizer necessary.

2. Secondary nutrients. These include, calcium, magnesium and sulfur.

A) Calcium is used to help reduce soil acidity and aids nutrient absorption within the plant itself. Calcium also improves the plants ability to resist disease.

B) Magnesium is a component of chlorophyll which makes it necessary for photosynthesis and it helps the plant metabolize phosphorous molecules.

C) Sulfur is found marginally in soils for plant needs. Sulfur is used by plants to synthesize important amino acids and is useful in improving plants winter hardiness.

3. Micronutrients. Needed in small amounts, they are critically needed for normal plant growth. The demand for these micronutrients are growing as improved crop yields and more vegetation is being removed from the fields, which are allowing deficient soil levels to be seen. The micronutrients need to be added in the fertilizer to replenish the soils. **The essential micronutrients include, boron, chlorine, copper, zinc, manganese, molybdenum, nickel and iron.** Each of these are required under specific conditions, soil type, soil acidity, and plants being grown may require different amounts of the trace micronutrients.

Bill Gates recently made this comment about the fertilizer industry. "I've never been shy about my passion for fertilizer. It's a magical innovation that's responsible for saving millions of lives from hunger and lifting millions more out of poverty by boosting agricultural productivity." The fertilizer industry is growing and critical to the growing population while growing sustainability and specific use of natural resources.

All three classes of nutrients which make up fertilizer are available from Nutrient Ag Products in Papillion, Nebraska. Call the Nutrient Ag Products office at 402-502-4824 for availability and pricing.