



A closer look at Potassium

Global K resources

Potassium fertilizer is commonly called "potash" in reference to early methods of making K fertilizer from wood ash. Nowadays, potash refers to a variety of K-bearing fertilizers and minerals. Muriate of potash (KCl) is the most widely used K fertilizer, but many more are produced and traded around the world.

According to the FAO, the global demand for potash was expected to grow by 2.6% from 2014 to 2018.

Potassium and Human Health

Is your K intake sufficient?

Though a daily consumption of K is essential for human heart and bone health, a great number of people lack an adequate supply of it in their food. K is now referred to as a "shortfall nutrient" due to its chronic absence from people's diets.

The largest single food contributor to K is found in white vegetables, notably potatoes; other significant contributors of dietary K are milk, coffee, chicken, beef, citrus juices, and bananas. However, diets have gradually transformed, especially in modern Western countries, and it is now estimated for instance that only 3% of American adults consume enough K daily.

Food	Portion size	Potassium, mg
Potato	small (143 g)	738
Tomato juice	1 cup (243g)	664
Plain yogurt	1 cup (245g)	550
Orange juice	1 cup (248 g)	496
Banana	medium (118g)	422
Skim milk	1 cup (245 g)	382

K and plant health

Potassium helps plants survive against stress, pests and diseases. In addition to its essential role in plants' metabolic processes, potassium, when supplied adequately, helps plants produce defensive compounds, that help them fight off pests. An adequate K concentration in plants also hardens cells and tissues, to resist penetration of pathogens and insect pests, and to repair any damaged tissue.

Supplying adequate potassium supply to crops is the best way to lower their requirement of pest control treatments!

Read more [here!](#)

Selecting the right Potassium source

They are either applied to the soil, directly on the plant (foliage) or added to aqueous solutions, in order to maintain soil fertility, improve crop development, yield and/or crop quality.

Soils in need of additional K most frequently receive applications of inorganic fertilizers. The most common K fertilizer sources are: Potassium chloride (KCl, Muriate of potash); Potassium sulfate (K₂SO₄, Sulfate of potash); Potassium nitrate (KNO₃, Nitrate of potash); Langbeinite (K₂SO₄, 2MgSO₄). All K-containing fertilizers provide the same K nutrition to crops, the main difference is in the elements that accompany the K.

Selecting the right Potassium rate

Choosing the right application rate of K fertilizer is an important issue, though too frequently overlooked.

K fertilizers are commonly applied based on the results of soil testing, but specialists also advise to consider other procedures, such as: applying an amount of K fertilizer on crops equivalent to that removed during the harvest; relying on improved soil testing techniques, such as cation exchange resins, to determine soils' need in K; taking into account soil differences, such as the presence of minerals that affect how K is made available to plants; and using organic crop residue.

Timing the K fertilizer application

Choosing the right time to apply K fertilizer is important, but often planned with other field operation and therefore can occur before planting, following planting or as a foliar spray during the growing season. However, the uptake of K fertilizers by plants requires for plant roots to be healthy, and growing in soils that aren't cold, compacted or waterlogged. It is therefore crucial to find the appropriate time to apply them. Determining that time requires a good understanding of soil factors, root dynamics and crop demands.

4R nutrient stewardship helps determine how crop demand for K changes through the seasons, and how to increase the amount of plant-available K in soils.

Choosing the right K fertilizer placement

K fertilizers can be applied to crops in many different ways: they may be broadcast or sprayed on the soil surface then either worked in or not with tillage implements, placed below the soil surface at various depths and distances from plants, or sprayed on crop leaves.

How K is applied to a crop depends on a variety of factors. For instance, for plant organs that have a high K demand develop rapidly, foliar applications of K can be beneficial. Matching K supply to water supply in the soil is a strategy used when crops are irrigated; and applying K in the same band as N or P increases the likelihood that the branching root system will access K too, as N and P are known to stimulate root branching.

Research suggests that placement of K appears to be less critical as the overall K supply in the soil increases.