IPNI Plant Nutrition TODAY
Better Crops, Better Environment...through Science

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WHERE DOES POTASH COME FROM?

Maintenance of an adequate K supply in the soil is essential for sustaining global food supplies. Many soils need an additional source of K to supplement the native minerals in order to meet this minimum requirement. Crops remove large amounts of K from the soil in the harvested portion. At some point, it is necessary to replenish the supply of this nutrient.

Potassium fertilizer (commonly called potash) is mined from underground deposits in many parts of the world. Canada is the largest producer of potash fertilizer, followed by Belarus, Russia, and China. The potash ore is extracted from depths exceeding one-half mile below the earth's surface.

The potash ore is first crushed and washed to remove any clay or minerals that may be present. Some potash ore contains iron that imparts a red tint to the final fertilizer. The sodium salts are next separated and removed from the potash. The potash particles are then compacted to achieve the desired size for convenient handling and spreading.

A few naturally occurring surface-water brines (such as the Great Salt Lake in Utah and the Dead Sea bordering Jordan and Israel) contain sufficient K to make potash extraction feasible. Solar evaporation is used to concentrate the salts, which are washed to separate the K salts from the sodium salt.

Potassium has many important functions in plants. Perhaps the most noted roles are for regulating plant water relations, activating enzymes, and promoting protein formation. Potassium also plays a significant role in improving the quality of the harvested plant products and enhancing disease and insect resistance.

The finished potash fertilizers are important global commodities that are transported across the world. China is the largest potash consumer, followed by the USA, India, and Brazil. There are many excellent potash fertilizers available; the selection depends on the agronomic need of the crop. The K portion of all potash fertilizer is identical, the difference being the anion present. The most common fertilizers include: Potassium Chloride (KCl); Potassium Sulfate (K_2SO_4); Potassium Magnesium Sulfate ($K_2SO_4 \cdot 2MgSO_4$); and Potassium Nitrate (KNO_3).

The results of regular soil testing and consultation with a local Certified Crop Adviser (CCA) will provide guidance on how to best manage the K supply for your crops. The next time you apply potash fertilizer, consider the complex journey that it took to get those nutrients to your plants.

A visual tour of the potash production process can be seen at this URL: **http://info.ipni.net/potashtech**

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Abbreviations: K = potassium.