

Potassium or Potash

Symbol: K from German *Kalium*. Potassium is a major nutrient element essential for plant growth. The pure element potassium is a grey metal that reacts violently with water, spitting flame and smoke. Plants indulge in "luxury consumption" when more K is present than is needed. It can be lost by leaching.

K is supplied by potassium sulfate, potassium chloride (muriate of potash) and by sul-po-mag (sulfate of potash-magnesia). K-sulfate carries 50 per cent K_2O equivalent, compared to about 60 per cent K_2O in muriate of potash and 21 per cent in sul-po-mag. K-sulfate yields sulfur to plants, a nutrient.

In balance with N, P and other nutrients, potassium performs several essential functions, some not yet well understood. It is not known to enter into chemical combination and become a part of the plant. It helps plants resist drought and diseases. It builds cellulose and makes plants stiffer. Root growth is improved. Many enzyme actions are enhanced. Respiration is reduced. Photosynthesis and food formation are improved. It helps to keep conducting tissues clear for translocation of sugars and starch. Plants stay more plump with reduced wilting and lower water loss. Potassium helps roots to absorb nitrates.

Soil tests accurately indicate levels of available K. Low to medium levels are sufficient for most turf. Two to four split applications a season are considered better than one heavy treatment for maintaining moderate levels.

Potassium materials are inorganic and will burn foliage. Thorough watering usually eliminates possible damage. Hydraulic application of finely-powdered forms is becoming popular. Re-cycling of nutrients where clippings are returned reduces the need for applied K.

Most potash comes from Carlsbad, N.M., Searles Lake, Calif., and Wendover, Utah. There are large reserves in Canada, also in Germany, France, the Soviet Union and Spain.

Potassium deserves to be used intelligently, as needed, according to soil tests.

of potash. Some courses have been on this type of program for over five years and report excellent results. No sign of P-deficiency has occurred to date.

Hydraulic feeding (sprayer, proportioner or siphon) makes it easy to add soluble sulfate of potash to the tank holding the straight nitrogen so that no extra labor is involved. Dry applications on fairways can be made by having a custom mix prepared that is geared to the soil needs (which may be a 3-0-1, a 4-0-1, or even a 5-0-1). The other way, of course, is to make separate applications of the individual materials.

Sulfate of potash is preferred over muriate for the reason that the sulfur is a nutrient element (Chlorine is not) and often is deficient in turf soils.

Frequency of feeding N-O-K will vary with the type of N material selected. The important thing is to reduce or avoid P use until soil tests show more realistic levels for available P.

Zebra Grass

Q. We want information regarding Zebra grass. Would you tell us if you are familiar with this product. It is our understanding that

this grass will grow almost anywhere, that it spreads rapidly, is very hardy and never needs to be cut. We would appreciate any information you might be able to give us. (Colorado)

A. We, too, have been searching for such a grass. To date we have not found it. Neither do we know of anyone who has seen this grass. If and when you locate it please call us COLLECT.

Response to Lime

Q. We draw soil samples once a year for tests which guide our liming and fertilizing program (except nitrogen). We use ground limestone to keep the pH range close to 7.0. Why is it we often see a response to lime that resembles a combination of nitrogen and fungicide? The grass has better color, and diseases seem to be noticeably less. What is the explanation? (Maryland)

A. The first effect (if, indeed, any reaction is first) is that of replacing hydrogen (acid) ions on clay minerals and soil organic matter with calcium and magnesium ions, thus pro-

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