SUL-PO-MAG® AGRI-FACTS

Potatoes - Issue 1

Potassium, magnesium and sulfur are absolutely essential nutrients for high-yielding, high-quality and profitable potato production. Sandy soils, best suited for this tuber crop, have a small nutrient reservoir and require a finely tuned fertilization program. No one questions that maximum profit potato yields are dependent upon fertile soils teamed with top management inputs. This happens when the native soil fertility is fortified with the right mix of fertilizer-supplied nutrients. How, then, does one go about building that "fertile soil"?

A PRODUCTIVE POTATO SOIL IS ALWAYS A FERTILE SOIL

Soil test results play a key role in building a solid fertility program, but that can't do the job alone. Answers to the following three questions will help in making decisions about source, timing and rate of fertilizer nutrients.

WHAT IS THE BEST SOURCE OF K, MG AND S FOR POTATOES?

Research shows that differences between nutrient sources can influence both yield and quality of potatoes. This can happen when a source is also a multi-nutrient carrier or when specific physical and/or chemical qualities exist in the product. For potatoes, select the best source having the following qualities.

Low Salt Index fertilizers are beneficial for potatoes, tomatoes and other crops having high nutrient requirements and for crops grown in regions with limited rainfall.

Low Chloride Content fertilizers improve crop market quality. This is especially true for chipping potatoes. High Nutrient Availability comes with sources characterized as 100% water-soluble. For potatoes, this can improve nutrient uptake from fertilizer placed close to the seed piece in cool, most soils.

HOW MUCH K, MG AND S ARE REQUIRED FOR POTATOES?

The following table illustrates large quantities of nutrients required for high-yielding, high-quality potato production.

Potato Nutrient Utilization

YIELD	N	P_2O_5	K_2O	Mg	S
tons/ha	---------- kg/ha ----------				
Total Nutrient Uptake (plants and tubers)					
56	280	130	400	36	27
Field Nutrient Removal (tubers only)					
56	170	40	250	12	14

In addition, consider the following facts in determining what the soil can supply and how much must be available from applied fertilizer:

Higher Yields place greater stress on soil nutrient reserves. To produce 56 tons, each acre of plants will absorb from the soil and from applied fertilizer a total of about 400 kg of potash, 36 kg of magnesium and nearly 27 kg of sulfur. These amounts will increase even further with higher yields.

Balanced Nutrition recognizes not only the teamwork between nitrogen, potassium and other inputs but also the greater stress these nutrients can place on availability of soil magnesium and sulfur. This increases the likelihood of crop response to these nutrients.

Crop Nutrient Removal from the field is high. A 56-ton crop of tubers will remove about 250 kg of K_2O, 12 kg of Mg and 14 kg of S. Soil reserves can be quickly depleted.

WHEN IS K, MG AND S NEEDED MOST BY POTATOES?

Short season crops planted in cold soils respond well to starter fertilization.

Timing that sudden burst of rapid vegetative growth with the greatest nutrient availability from the soil and applied fertilizer is key to optimum plant growth, yield, quality and profitability.

Starter Fertilizer gives that needed early boost to seedling development. Seed pieces go into cold, moist soils that are slow to release both magnesium and sulfur to a small root system.

Peak Nutrient Uptake Periods cause roots to work overtime to absorb enough K, Mg and S for the fast growing plant. Schedule nutrient applications to supply these critical periods of crop growth.

Climatic Conditions can create nutritional shortages and erode potato yield and profitability. Intense rainfall on sandy soil can leach N, K, Mg and S below the potato root zone and result in an unexpected nutrient shortage. Replacement fertilization becomes essential for plants that are still developing yield and quality potential. Building soil fertility to the highest, most profitable level is no simple challenge. The primary objective in fertilizer use is clear . . . to eliminate plant nutrition as a yield and profit limiting factor in potato production.

Sul-Po-Mag Is A High Quality Source Of K, Mg And S
Fertilization programs for intensively managed potatoes must be capable of generating both high yield and quality. Sul-Po-Mag fits well into such a plant nutrition program. This high quality fertilizer contains both a low salt index and low chloride content. This high analysis product contains 55% nutrients . . . 21-22% K_2O . . . 10.5-11% Mg . . . and 21- 22% S. In the granular form it is well suited for bulk blending as well as direct application to the soil.