



# SOLUPHOS

Fertilizer with Phosphorus Solubilizing Bacteria

**SoluPhos** is a granular fertilizer containing natural plant materials such as soybean meal, peanut meal, rapeseed meal, and sesame seed meal and a phosphorus solubilizing bacteria, *Bacillus licheniformis*. The *Bacillus licheniformis* produces organic acids and enzymes to solubilize phosphorus in the soil making it available to plants. **SoluPhos** is designed not only to supply phosphorus but also to mine fixed phosphorus in the soil. The mining process is continuous and hence will continuously supply available phosphorus to plants.

## FEEDING PLANTS VS. FEEDING SOIL

Phosphorus is vital to plant growth. It is involved in several key functions during the growing cycle including the following:

- Cell division and tissue growth
- Respiration and photosynthesis
- Enhancing photosynthesis
- Promoting transformation of sugars
- Enhancing nutrient movement within the plant
- Transferring genetic characteristics from one generation to the next

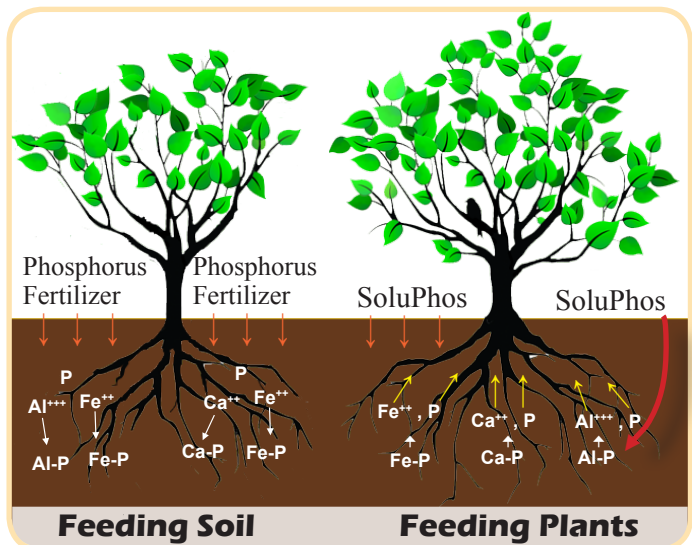
In traditional farming, phosphorus is most commonly applied to the soil. However, once applied, phosphorus reacts immediately with aluminum, iron, and calcium and becomes tied up in the soil. Phosphorus remains fixed in the soil causing build up and is unavailable to plants. We constantly FEED SOIL not PLANTS. **SoluPhos** mines the fixed phosphorus in the soil and feeds the PLANTS.

## Advantages of Using SoluPhos

- Feeding plants not soil
- Bacteria dissolve and unlock phosphorus in the soil
- Organic matter builds soil structure
- Organic matter increases water holding capacity of soil
- Softer chemistry than traditional N-P-K fertilizer
- Increasing nutrient content of vegetables and fruits
- Improving crop productivity and quality
- Sustainable and green product

## CONTINUOUS PHOSPHORUS

*Bacillus licheniformis* activates soil making it a living body. This living process continuously solubilizes phosphorus in the soil allowing plant roots to be surrounded by available phosphorus. This will eliminate the stress on plants caused by too much or insufficient phosphorus and result in better growth and yield.



# ADVANTAGES OF USING SOLUPHOS

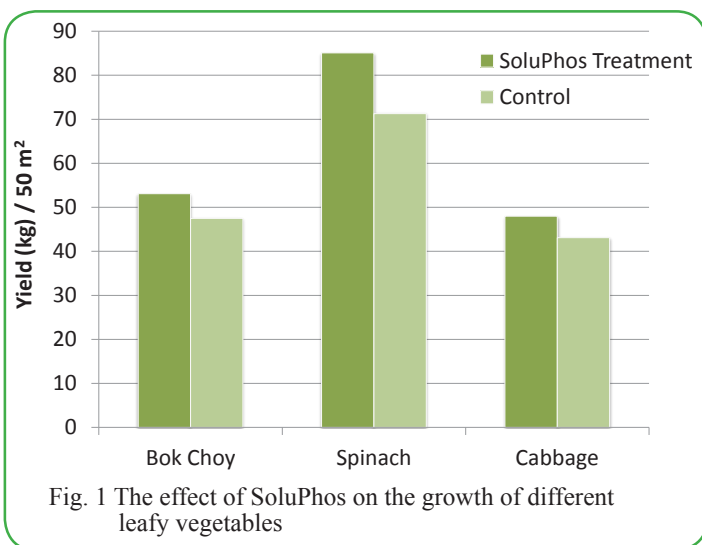


Fig. 2. The growth of spinach after SoluPhos treatment.

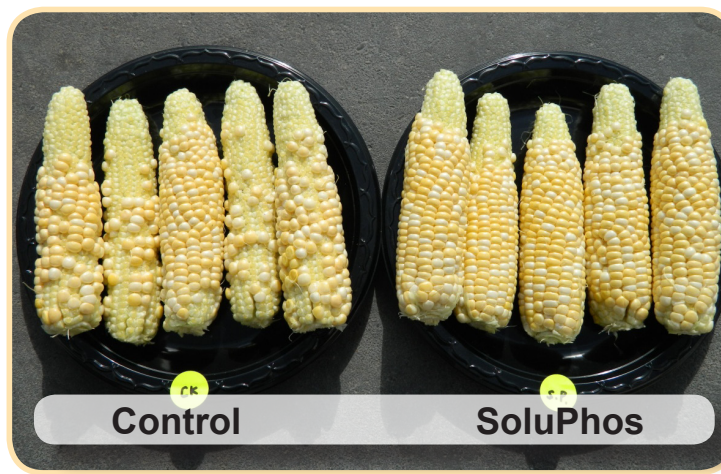


Fig. 4. The effect of SoluPhos on the productivity of sweet corn

TABLE 1 The effect of SoluPhos on the nutrient content of lettuce

Treatment	Nutrient Content of Trace Elements (ppm)				
	Zn	Mn	Fe	Cu	B
Control	17	39	86	4.6	22
SoluPhos	16	42	130	6.5	24

TABLE 2 The effect of SoluPhos on the productivity of sweet corn

Treatment	Plant Dry Weight (g)	% Control	Ear Fresh Weight (g)	% Control	Kernel Fresh Weight (g)	% Control	Kernel Dry Weight (g)	% Control
SoluPhos	172.7	122	143.8	120	63.8	180	11.6	180
Control	141.3	100	123.8	100	35.7	100	6.4	100



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