



PRODUCT INFO
& DATASHEET

"SICOPONICS" Scientific Hydroponics – BIOLOGICAL RANGE

SICOBIO-TP

seed treatment, containing Phosphate solubilising Bacteria (PSB) (esp. on potato seed)

3/2014

1. PRODUCT DESCRIPTION

SICOBIO-TP has been developed as a potato seed treatment initially. It is a soluble powder formulation based on high grade MAP and Ammonium Sulphate with Humic and Fulvic acids combined with **selected and cultivated phosphate solubilising bacteria** to promote growth.

There are further micronutrients including both rapid availability Zinc and Zinc oxide which becomes available to the plant later in the season. SICOBIO-TP will maximise early root development and maximise plant health, skin finish and survival by improving nutrient uptake and continuing to deliver Zinc to the root zone well into the growing season. The phosphate solubilising bacteria will optimise the phosphate available to the crop and ensure as little is left following harvest as possible.

2. PRODUCT SPECIFICATIONS

SICOBIO-TP contains N and P with vital trace elements: Zinc, Magnesium; Humic acids; and the powerful activity of Phosphorus solubilising bacteria.

Nitrogen (N)	80g/kg	(All Ammoniacal)
Phosphorus (P2O5)	320g/kg	(P2O5 equivalent all as Phosphate)
Sulphur (S)	120g/kg	(SO3 equivalent)
Zinc (Zn)	50g/kg	(OxySulphate)
Magnesium (MgO)	6g/kg	(as MgO)
Humic acids (soluble)	10g/kg	(Improves nutrient uptake and seedling health)

PLUS 20 Billion CFU/kg of phosphate solubilising bacteria (PSB), including Pantoea agglomerans strain (P5), Microbacterium laevaniformans strain (P7) and Pseudomonas putida strain (P13).

Phosphate Solubilising Bacteria (PSB) are a group of beneficial bacteria capable of hydrolysing organic and inorganic phosphorus from insoluble compounds. **Phosphate solubilisation ability of the microorganisms is considered to be one of the most important traits associated with plant phosphate nutrition.** It is generally accepted that the mechanism of mineral phosphate solubilisation by PSB strains is associated with the release of low molecular weight organic acids through which their hydroxyl and carboxyl groups complex or chelate the cations bound to phosphate, thereby converting it into soluble forms. In addition, **some PSB produce phosphatase like phytase** that hydrolyse organic forms of phosphate compounds efficiently.

3. BENEFITS

It has been well recognised in recent years that the maximum potential of field crops is determined during the vital survival and development period during the first thirty days from germination.

That early growth period determines the number of young plants that will not only chit, but survive to deliver the final yield and quality. The faster the developing tuber lays down the maximum root structure, the faster it collects nutrients to sustain rapid early growth.

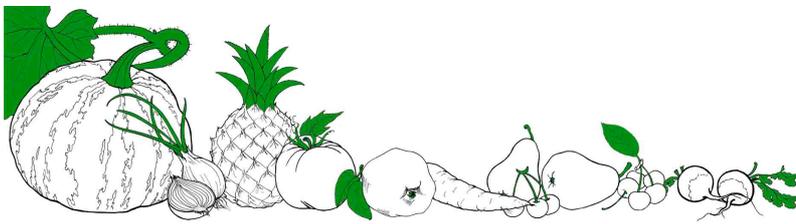
The more rapid early growth is achieved the better the young plants survive adverse conditions and early photosynthetic area is optimised. The bulk of the marketable yield comes from the initial tuber set.

- Zinc has been shown to help with skin finish and marketable yield.
- Phosphates boost root development and overall energy levels, improving all aspects of early health and development. Potatoes are particularly shy at taking up available phosphates and it has been readily shown that the more Phosphate that is available, the more is taken up by the potato crop, leading to maximum yield and quality.
- The phosphate solubilising bacteria in SICOBIO-TP are all derived from natural soil cultures and refined to

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SICO FERTILISERS
EVERY TIME THE RIGHT SOLUTION



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- generate the maximum response during crop establishment through to bulking-up.
- The humic acid content improves the plants ability to metabolise these nutrients.
 - Zinc is well known to support seedling health and development in many crops, and potatoes grown in Zinc-rich soils produce good skin finish.
 - Magnesium is not always readily available during crop establishment.
 - Zinc in the Sulphate form is quickly available and as the Oxide becomes available later in the life of the crop.
 - The high population of the PSB will discourage and compete with any potentially pathogenic bacteria that may be in the root zone during early growth.

SICOBIO-TP has been designed to complement existing seed treatments, promoting maximum root development and improving both speed of growth and the health of the young plant during the vital crop establishment phase. This produces the optimum platform on which to build yield and quality, generating maximum returns for the grower.

SICOBIO-TP is unique and was trialled for the first time in 2012, these results are available on application. Initial results are very encouraging. It may be applied in combination with conventional pesticidal seed treatments.

4. RECOMMENDED USAGE

Use 2kg/Ton of potato seed (all varieties may be treated) via a suitable on-planter applicator.

5. PACKING

In 5 kg bags x 100 per pallet. Min. order: 2 pallets = 1000 kgs