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ABC's Of Phosphite

Making your life easy—and getting great results—is what Growth Products is all about. Growth Products is also all about the science behind our products. Here we offer a brief primer on phosphite and how it differs from phosphate.

Phosphorus (P) is essential element for plant photosynthesis, root growth, energy storage and protein formation. The most common form of P in fertilizers is phosphate, which is a chemically stable molecule with four oxygen atoms. Because of its rock-like nature, the phosphate in traditional granular fertilizers often becomes bound in soils and is not fully available to plants.

Phosphite is also a form of P, but it has one less oxygen atom than phosphate. Being "lighter" by one oxygen atom than phosphate makes a tremendous difference. Phosphite is less chemically stable, and therefore more agile than its staid cousin. It also has certain benefits that phosphate never dreamed of.

- TKO helps fungicides work better.
- Stop citrus canker
- More Brixs (sugar content) in grapes
- Easily absorbed through the leaf and transported to fruit.
- Highly systemic via xylem and phloem
- Protection throughout the whole plant including new growth

Phosphite is highly water soluble, and when applied to plants is quickly absorbed by leaves, roots, and branches. Once in plants, it is extremely mobile, exhibiting "symplastic ambimobility," meaning that it is uniquely able to move in both xylem and phloem[1].

Years of use in the agricultural industry has shown that phosphite has noticeable biostimulant properties, in addition to its nutrient properties. Phosphite provides growers with superior root formation, seedling growth, bud formation, blossom and fruit set. It improves both yield and quality in almost all crops, including citrus, avocados, strawberries, vegetables and deciduous and non-deciduous fruits.

Phosphite also boosts a crop's resistance to stress and fungal disease. Interestingly, phosphite ions unlike elemental phosphate have fungitoxic effects on several plant pathogens[1]. EPA labeled fungicides with phosphite as an active ingredient have been proven effective against root rots such as Pythium and Phytophthora.[1,2] (Note: Many phosphite fungicides and phosphite fertilizers have the same active ingredient, but only those products with an EPA fungicide label can claim any fungicidal properties or benefits. This News As It Happens *discusses published reports on phosphite, and does not make any fungicidal claims for Growth Products' phosphite products.)*

Scientists find phosphites both fascinating and a fertile source of ongoing debate and research. The growth-stimulating and other beneficial effects of phosphite are well-documented, even if they are not fully understood.[1,2]

TKO Phosphite (0-29-26) is a highly centrated P/K solution containing mono- and di-potassium salts of phosphorous acid. A clear liquid, TKO Phosphite is easy to mix and easy to use.

[1] *Understanding Phosphonate Products*, prepared by Peter Landschoot, Professor and Joshua Cook, Dept. of Crop and Soil Sciences, The Pennsylvania State University.
[2] *Phosphite Fertilizers: What Are They? Can You Use Them? What Can They Do?*, by C.J. Lovatt and R. L. Mikkelsen. Better Crops, vol. 90 (2006, No. 4)

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