Nutriology®

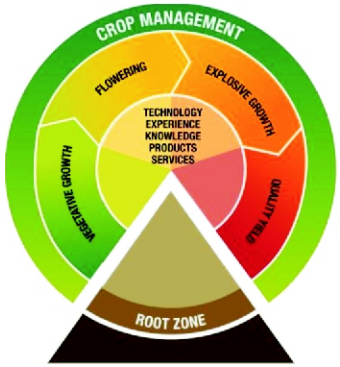
The science of growing.

Maximum profit for farmers is achieved by optimizing crop quality and yield. Nutriology®, the science of growing, is achieved by creating a favourable soil environment and the management of each stage of the crop's life cycle.

Nutriology® focuses on the following areas:

The Root Zone
The roots are the foundation on which a quality yield is laid. In order to lay this foundation we need to create a favourable soil environment, for maximum root development and nutrient uptake.

Omnia has an unique range of tools, soil, sap, (OmniSap®), leaf and water analyses, agronomic knowledge and superior products. Through the right combinations of these we are able to enhance soil fertility and stimulate root development and improve nutrient uptake.



Crop management
- Vegetative growth - Flowering
- Explosive growth - Quality yield

Each growth phase is managed by using our unique OmniSap® analyses to monitor performance and determine the crop's needs. Using our world-class knowledge and superior product range, Omnia is able to alleviate plant stress and direct growth into producing high quality yields. Nutriology® focuses on identifying and managing stress or limiting factors through the skilled application of innovative tools and products.

The result? Increased profitability and prosperity for farmers from higher yields and improved produce quality.

TALK TO US. IT PAYS.

Contact

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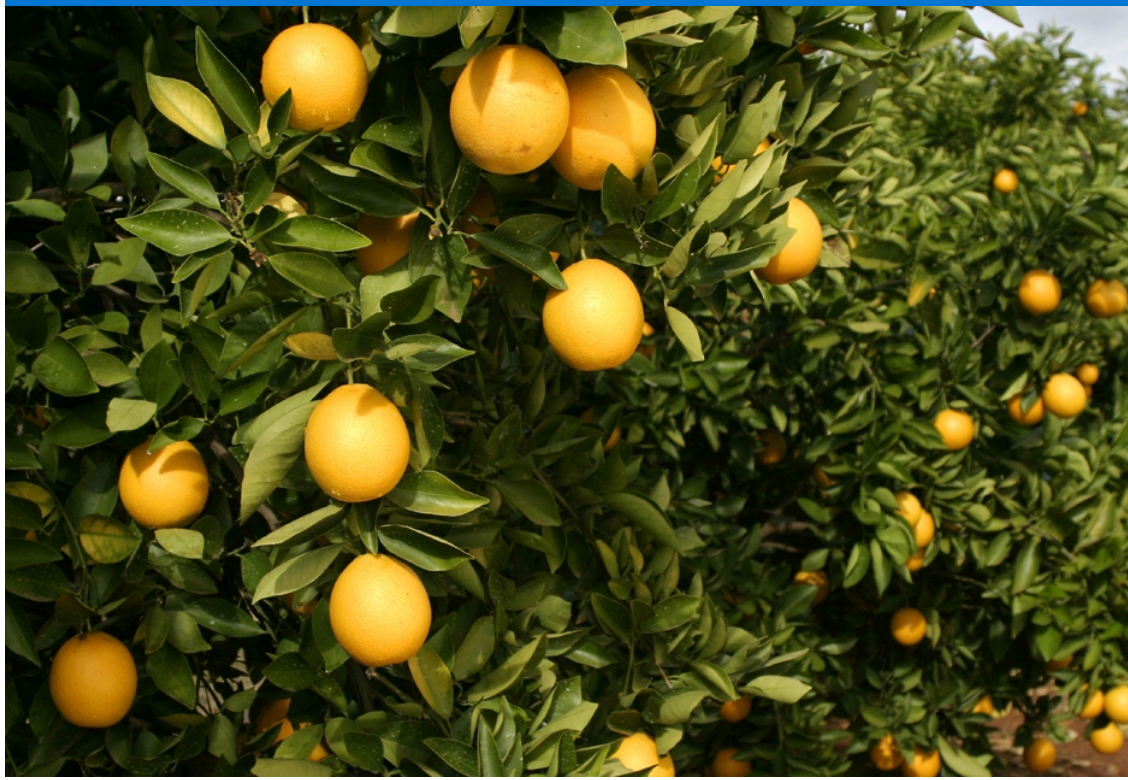
TECH MAP



omnia NUTRIOLOGY*

*the science of growing

Speedy root development at crop establishment is vital.

MAP provides two essential elements, Nitrogen (in Ammonium form) and Phosphorus (in the phosphate form). Both are commonly lacking in soils and each has a significant effect on rapid vegetative growth, characteristic of the early part of the crop cycle.

Speedy root development at crop establishment is vital, as roots scavenge for nutrients and water. The more extensive they are the more effective is uptake and the greater the buffer against moisture and nutrient stress.

PHOSPHOROUS:
The quality element

Phosphorous is an essential component of sugar phosphates which are used in photosynthesis, respiration and other metabolic processes. Trails confirm the important role Phosphorous plays in the quality of fruit.

Potatoes, well supplied with Phosphorous, produce starches that are more viscous and of better quality. Improvements in starch quality result from the additional linking between Phosphorous and the different chemical groups with in the starch.

In deciduous fruit, phosphate deficient trees produce fruits of poor quality, characteristically being small, green and immature with a low sugar and acid content and of poor taste.

PHOSPHOROUS:
The energy element

Growth requires energy, particularly in the initial stages when it is most rapid. The Phosphorous supplied by MAP, is absorbed in the phosphate form and is the key to releasing this energy. Once absorbed by the plant cells it becomes involved in respiration, the metabolism of sugars, cell division, protein production and in the uptake of other nutrients, processes which are vital for growth.

Phosphorous is able to fulfill this unique function because, chemically, it forms what are called pyrophosphate bonds - energy rich bonds, that allow for the energy transfer to take place and for growth to proceed.

The synergy benefit

As a source of both Nitrogen and Phosphorous, Omnia's MAP has several advantages. When supplied together, these elements have a positive influence on one another's uptake, the overall effect being greater than when simply applied alone.

Nitrogen supplied in the ammonium form is less susceptible to leaching, giving the developing root system a chance to find it. As the roots absorb ammonium Nitrogen, they acidify the soil solution, enhancing the solubility of Phosphorous thereby improving uptake.

PERIODS OF HIGH PHOSPHATE DEMAND:

A. Flowering
Immediately after pollenation, Phosphorous is mobilised and stored in the developing seeds as phytin, a compound essential for the growth of young plants. Should Phosphorous be limiting, the phytin content of the seeds and fruit will be depressed.

B. Germination
Young roots quickly exhaust their phosphate reserves and must scavenge the soil profile to find additional phosphate. By supplying a proportion of the total phosphate as MAP, as either a drench or through the irrigation system, one can ensure that the need for additional phosphate is met and there is no lag between growth and development.

Typical Analysis

Nitrogen	N	11.8%
Phosphorous	P	26.9%
Moisture Content		0.04%
pH (1.0% solution)		5.38
EC (0.1% solution)		0.9 mS/cm
Insolubles		<0.5%
Bulk Density		0.763 g/ml

Young plants gain more energy from ammonium nitrogen in MAP39™ than from the nitrate-nitrogen sources.

The ammonium nitrogen form proteins with a greater energy value.