



**Unlock  
your soil's  
potential!**

**It's the concentration  
that counts!**

- Concentrated liquid humate
- Improves nutrient availability
- Stimulates biological activity

*Talk to us. It pays.*



**Proudly Australian made**



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# What K-humate® does for you

## What are Humic Acids?

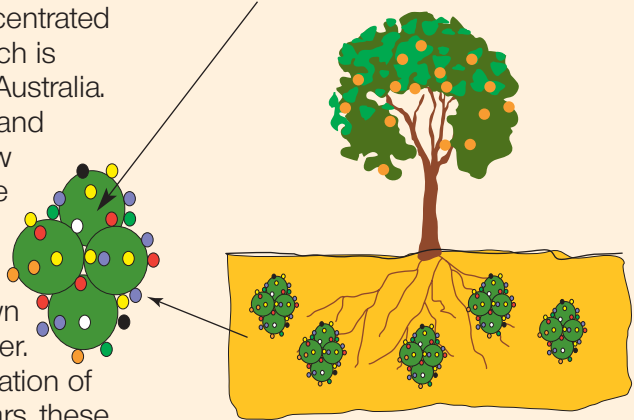
K-humate® is a highly concentrated source of humic acids which is sourced and produced in Australia. The product's high quality and proven performance is now well recognised all over the world.

Humic acids are naturally derived from the breakdown of plant and microbial matter. Humic acids are the foundation of all fertile soils. Over the years, these humic acids accumulate in the soil to provide the soil with greater nutrient holding ability, water holding capacity, readily available carbon food source for beneficial soil micro-organisms and better soil structures. This is Nature's way of minimising nutrient losses in order to maintain long-term soil fertility and to ensure sustainable plant growth.

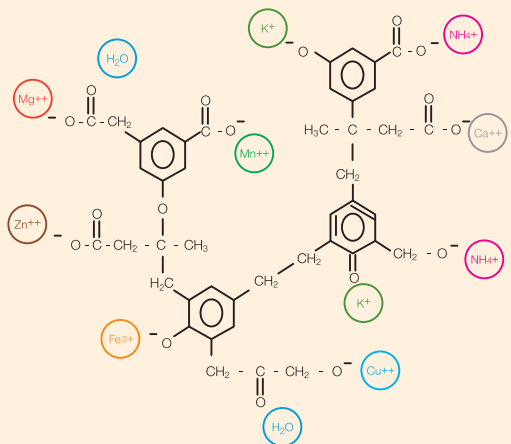
Humic acids present in the soil hold a wide range of micro-nutrients and macro-nutrients around plant roots to provide all the essential nutrients for quick root uptake and optimum plant growth. Humic acids also improve the wetting ability and water holding ability of the soil.

K-humate® provides a helping hand to farmers and growers to achieve greater crop production through a more effective use of applied fertilizers and maintaining long-term soil fertility.

Humic acid molecule with attached nutrients



*K-humate® holds onto a wide range of nutrients from applied fertilizers in the soil until plants are ready to use them. K-humate® also helps unlock bound nutrients in the soil, making them available to the plants.*



*Humic acids are very effective in chelating many plant nutrients and more importantly, in retaining water (see illustration above). This enables humic acids to retain a wide range of nutrients, all in close proximity to plant roots to provide more balanced nutrients for growth.*

# What K-humate® does for you

## Benefits of using K-humate®

### Biological

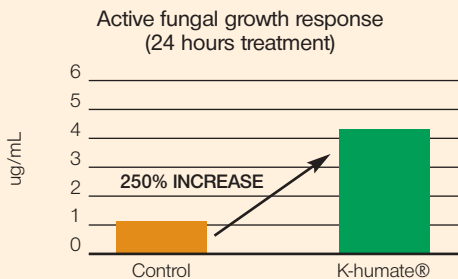
- Stimulates growth of beneficial soil fungi and bacteria.
- Provides readily available source of carbon for soil micro-organisms

### Chemical

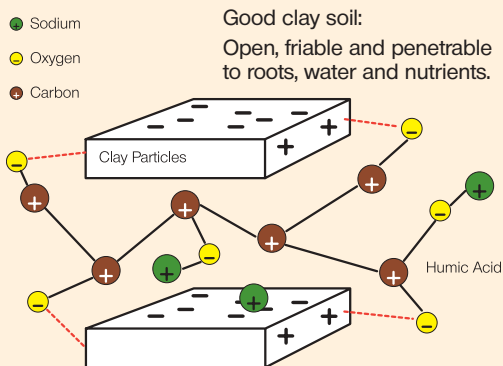
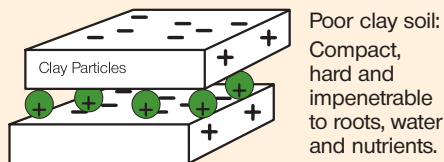
- Good chelating properties which reduce loss of nutrients due to leaching and run-off
- Free-up many soil-bound nutrients, particularly phosphates, calcium and micro-nutrients
- Lock-up aluminium in acidic soils which are harmful to plant growth
- Good buffering capacity which help stabilise the soil against strong pH changes from fertilizer applications

### Physical

- Promotes soil agglomeration and better soil structure
- Opens up heavy clays and hard, compact soils
- Helps soil wetting which reduces surface soil crusting and improves water penetration and retention in the soil



*Humic acids promote beneficial soil microbial growth by providing active carbon for their energy and biomass requirements. Recent studies have shown that applications of water containing 150 ppm of K-humate® stimulated significant growth of both the active fungal and bacterial population in a solution of compost tea.*



*K-humate® rejuvenates heavy clays which are compact and impenetrable to water and nutrients. When soils dry out, water is removed from between the clay particles, causing them to move very close together, shrink in volume and form cracks in the ground. This cracking in the ground is a common feature in clayey soils which are poor or devoid of organic matter. Humic acids in nature interact with the clay particles and prevent them from sticking closely together when they dry out in the summer. The more open clay structure will be able to retain more water for plant use.*

# Improving growing conditions

## Soil moisture

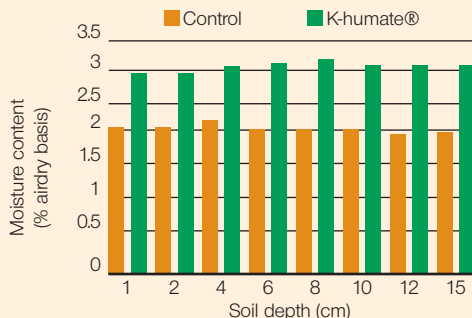
Humic acids, like most forms of plant organic matter, improves the water holding ability of most soils. In sandy soils, humic acids form a hydrophilic (water-attracting) coating on the sand particles which increases their wetting ability and moisture retention properties. In clays, humic acids open up the clay structures to enable greater water penetration and retention.

Better soil wetting ability and greater soil penetration reduce water losses from run-off and drainage and improved water usage and reduction in labour requirement and costs.

## Nutrient retention and availability to plants

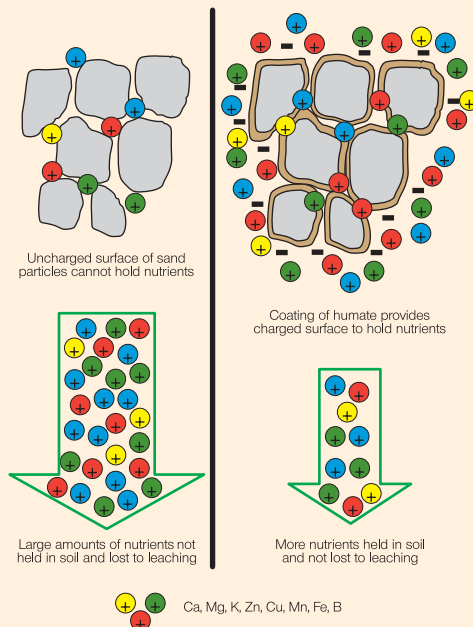
Soil organic matter (humus) has a great ability to hold nutrients in the soil until they are required by plants. It is the humic acid molecules in the humus which hold most of the nutrients from applied fertilizers.

K-humate®, with its high concentration of humic acids, greatly improves the ability of sandy soils to hold many essential nutrients such as ammonium, potassium, calcium, magnesium and the trace elements.



*A compact, acidic brown-grey clay loam topsoil (A1 horizon 0 - 25cm, pH 4.6) with very low organic matter located at a vineyard was much more easier to wet after treatments with water containing less than 0.25% K-humate® (1 part K-humate® to 100 parts water). The soil treated with K-humate® was also found to retain up to 50% more water than the untreated soils.*

## Cation exchange properties



*Humic acids, which are trapped in cracks and pores and adhered to the surfaces of sand particles, hold onto many important nutrients which would have been otherwise lost to leaching.*

# Better crop quality and yield

## Sustaining balanced nutrition

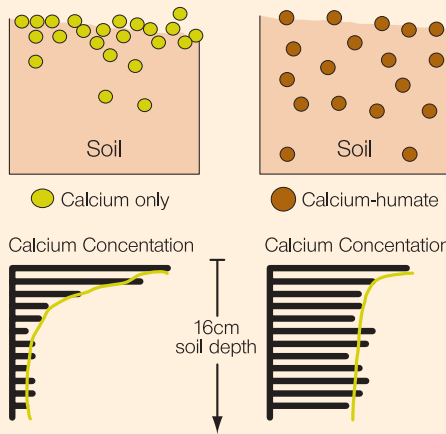
Like the saying goes, “You are what you eat”. Similarly, the well being of plants depends not only on what you feed your plants, but also on the availability of the nutrients in your applied fertilizers and how successfully the plants are able to take these nutrients through their root system and foliar.

Scientific studies have shown that a large proportion of your fertilizers are locked-up in the soil soon after application, particularly phosphates, calcium and micro-nutrients.

K-humate® can unlock some of the bound phosphate and micro-nutrients in the soil by chemical reactions which solubilise the fixed phosphates. Additional phosphates are also released by microbial activity brought about by the presence of K-humates.

## Better root growth

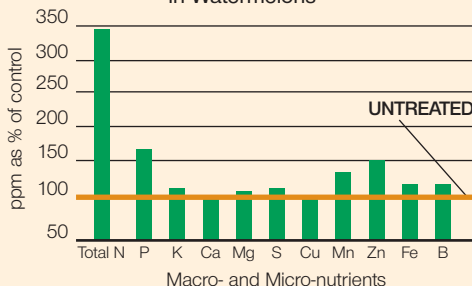
K-humate® also stimulates greater root growth in seedlings and mature plants resulting in higher nutrient uptake in plants and a greater ability to tolerate extended dry spells between irrigations or rainfall. A more extensive root system growth promotes greater plant vigor and better crop yield and quality.



*K-humate® soil conditioner increases the movement of calcium down the subsoil and plant root zone where it is most needed. Greater calcium concentration in the soil treated with K-humate® was evident down to a depth of 16cm. This means quicker response from applied calcium in terms of nutrient availability and plant uptake.*

*Calcium is important in promoting plant cell development which will result in healthier plants, greater resistance to diseases and better crop quality.*

## K-humate® promotes higher nutrient uptake in Watermelons



*Sap analysis of watermelon plants growing on land where K-humate® has been applied, at a rate of 20 litres per hectare over a season, clearly showed much higher nutrient concentrations in the K-humate® treated plants than those grown without K-humate®. The improvements in nutrient uptake were also found with many other crops including tomatoes, potatoes and citrus. Higher nutrient concentration in plants and crops is very important not only to plants but also to human health.*

## Frequently asked questions

### **Q. When is the best time to apply K-humate®?**

A. Throughout the growing season to improve uptake of nutrients by plants and to promote microbial activity. If possible, apply K-humate® shortly before or after fertiliser applications.

### **Q. How much K-humate® do I need and how do I apply in the field?**

A. Between 10 to 20 litres per Ha per growing season is effective. If possible, 4 applications of 5 litres/ha each spread over the growing season is better than one application of 20 litres/ha. Dilute K-humate® with water before application. Band application is more effective than broadcast application.

### **Q. Is there a particular soil type or crop that will benefit most from applications of K-humate®?**

A. K-humate® is good for all types of crops and soils, from sandy soils to heavy clays. It improves nutrient and water retention, leading to more vigorous plant growth and, in the longer term, better soil structures.

### **Q. Can I reduce my fertiliser applications if I use K-humate®?**

A. It is better to keep the same level of fertiliser and aim for better plant growth and greater crop yield. Reducing fertilisers will not help sustain the increased plant growth needed to get greater crop yield.

### **Q. How quickly can I expect to see benefits from the use of K-humate®?**

A. Better nutrient uptake and plant growth have been observed within a few weeks and will continue through the growing season with regular applications of K-humate®. Effects on physical properties of soils will generally take longer.

### **Q. I have been offered humates which are claimed to be more concentrated and cheaper than yours. Why should I buy K-humate®?**

A. Always ask for the Product Information Sheet to verify any claims about any product quality and composition. Or you can contact Omnia for advice on how to test these claims. Omnia stands by their product in terms of quality and humic acid concentration. K-humate® is manufactured in Australia using local resources and raw materials.

# Directions for use

## Suggested application rates

K-humate® should be diluted in sufficient water to obtain an even distribution on the applied area.

Crop	Ground Application	
	Application	Rates per Hectare per season
Orchard Crops	Apply to soil through irrigation at the beginning of the season	20 litres
Vineyards	Applied on its own through fertigation at post-harvest and Spring	10-20 litres
Bananas	Apply 5-10 litres per hectare through irrigation in Summer and 5-10 litres in Autumn	20 litres
Cereals and Cotton and Soya Beans	Apply on its own in the plant furrow	5-10 litres
Lucerne Fodder Crops	5 applications per annum	5-10 litres
Nurseries	Apply fortnightly through irrigation	10-20 litres
Pasture (sheep, beef)	Apply Spring and/or Autumn or half rates as a booster	10-20 litres
Pineapples	Apply with boom spray from planting on soil	20 litres
Peanuts	Apply with boom spray at planting on soil	5-10 litres
Potato and Vegetable crops	May be applied through fertigation at planting	10-20 litres
Sugar Cane	Apply one week before planting and at each ratoon	10-20 litres
Seedlings	Dip tray in a solution of 5% K-humate® and 1% K-kelp™	

## Compatibility with other products

K-humate® is not compatible with all agricultural organic chemicals like insecticides, herbicides and fungicide. Due to the high reactivity of K-humate® and many of these organic chemicals, adverse reactions may occur in some mixtures. Always check the instructions and precautions supplied with the organic chemicals.

# Your K-humate® supply

## Quality assurance

Omnia Specialities Australia manufactures one of the highest quality and highest concentration humic acids in the world. K-humate® is produced in the Latrobe Valley in Gippsland, Victoria, Australia, using only Australian resources and raw materials.

K-humate® is internationally recognised for its product quality and proven performance.

### Typical Analysis % (wt/vol)

Humate and Fulvate	26.0
Organic Carbon	15.0
Potassium (K)	6.0
Calcium (Ca)	0.03
Magnesium (Mg)	0.03
Sulphur (S)	0.07
Nitrogen (N)	0.13
Phosphorus (P)	0.04
Iron (Fe)	0.15
Silicon (si)	0.15
Sodium (Na)	0.07
Chloride (Cl)	0.07

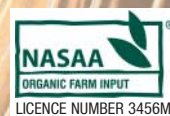
pH 10.9

Specific Gravity 1.1g/cm<sup>3</sup>



## Availability

K-humate® liquid is available in 20 litres, 200 litres, 1000 litres, bulk tanks and mobile tankers. Visit our website: [www.australianhumate.com](http://www.australianhumate.com) for further information on K-humate® and Omnia's other Nutriology products.



Your representative is: