

Unlock your soil's potential with K-humate

Most concentrated liquid humate



- Improves soil moisture and nutrient retention
- Reduces nutrient lock-up in the soil
- Helps the development of better soil structures
- Stimulates plant root growth and soil biological activity

PROUDLY MADE IN AUSTRALIA



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NUTRIOLOGY[®]
**the science of growing*

What K-humate® does for you

What are Humic Acids?

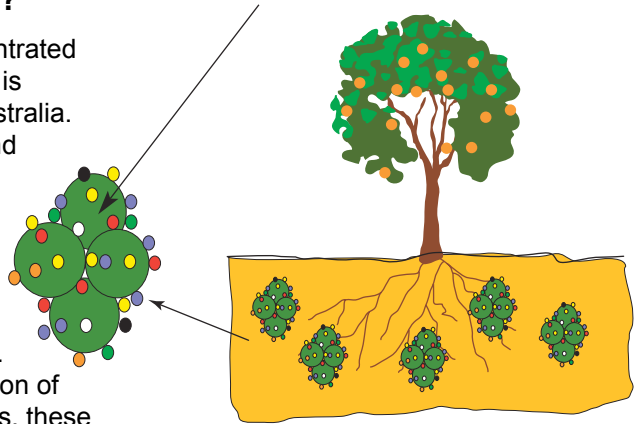
K-humate® is a highly concentrated source of humic acids which is sourced and produced in Australia. The product's high quality and proven performance is now well recognised all over the world.

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. This provides 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.

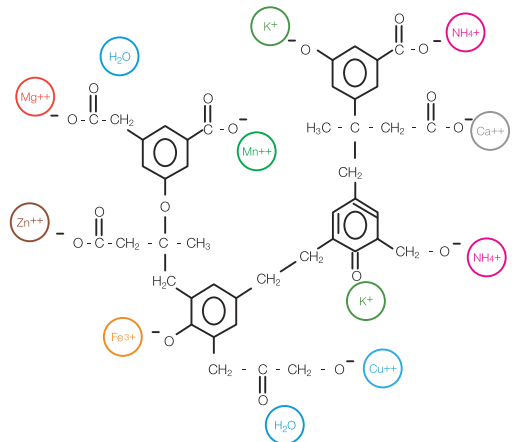
Humic acids present in the soil hold a wide range of micro-nutrients and macro-nutrients around plant roots. This provides all the essential nutrients for quick root uptake and optimum plant growth. Humic acids also improve the wetting ability and water holding ability of the soil.

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

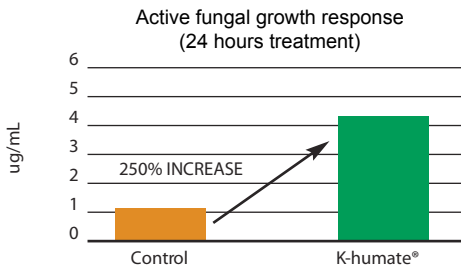
- Stimulates growth of beneficial soil fungi and bacteria, stronger root systems become increasingly resistant to biotic and abiotic stress conditions
- Provides readily available source of carbon source for stimulation and growth of soil micro-organisms

Chemical

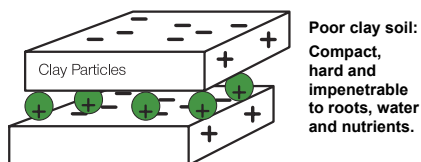
- Good chelating properties reducing nutrient loss due to leaching and run-off
- Release of soil-bound nutrients, particularly phosphates, calcium and micro-nutrients
- Lock-up aluminium in acidic soils which is harmful to plant growth
- Buffering capacity which assists soil stabilisation against strong pH changes from fertilizer applications

Physical

- Promotes soil agglomeration and creates better soil structure facilitating improved root penetration enabling better access to available minerals and nutrients
- Opens up heavy clays and hard, compact soils
- Improves soil wetting capability which reduces surface soil crusting and improves water penetration and retention in soils

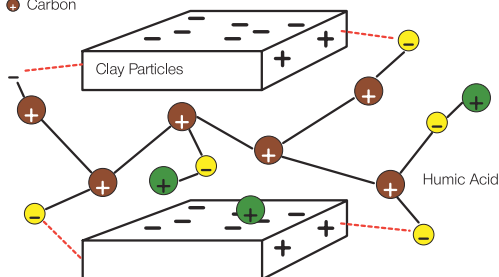


Humic acids promote beneficial soil microbial growth by providing active carbon for their energy and biomass requirements. Recent studies have shown that applications of water containing 150 ppm of K-humate® stimulated significant growth of both the active fungal and bacterial population in a solution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



- Sodium
- Oxygen
- Carbon

Good clay soil:
Open, friable and penetrable
to roots, water and nutrients.



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 clay 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

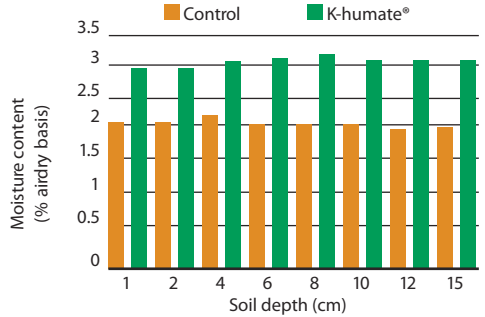
Humic acids, like most forms of plant organic matter, improves the water holding ability of most soils. In sandy soils, humic acids form a hydrophilic (water-attracting) coating on the sand particles which increases their wetting ability and moisture retention properties. In clays, humic acids open up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

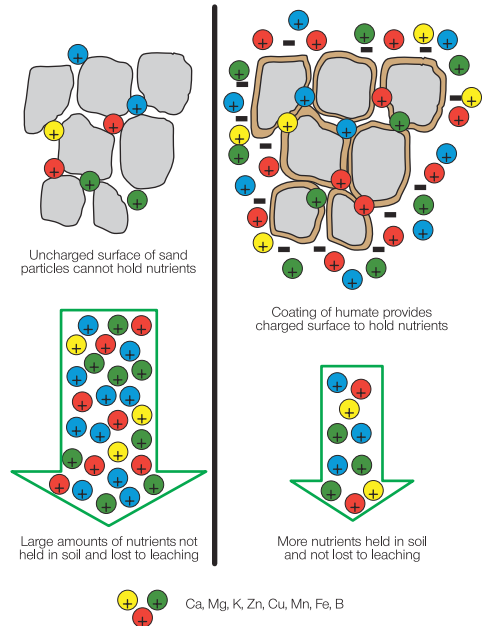
Soil organic matter (humus) has a great ability to hold nutrients in the soil until they are required by plants. It is the humic acid molecules in the humus which hold most of the nutrients from applied fertilizers.

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

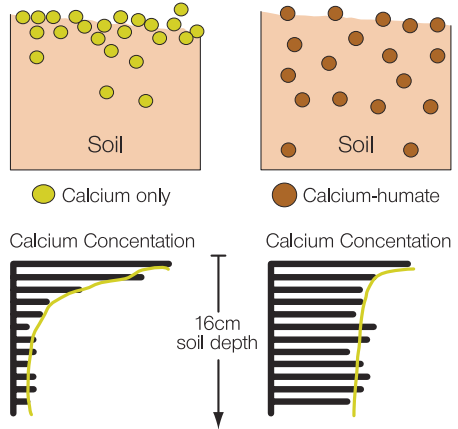
The saying goes, “You are what you eat”. Similarly, the well being of plants depends not only on what you feed your plants, but also on the availability of the nutrients in applied fertilizers and how successfully the plants are able to take these nutrients through their root system and foliar.

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 micronutrients 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.

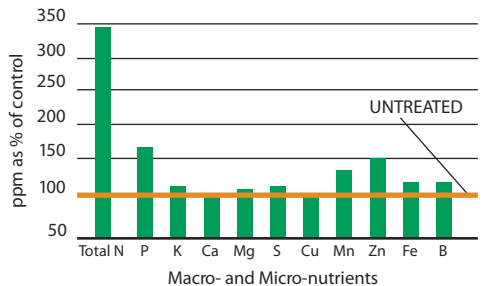
Better root growth

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 fertilizer applications.

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

A. Between 10 to 20 litres per hectare per growing season is effective.
If possible, four applications of 5 litres / hectare each spread over the growing season is better than one application of 20 litres / hectare.
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 fertilizer applications if I use K-humate®?

A. It is better to keep the same level of fertilizer and aim for better plant growth and greater crop yield. Reducing fertilizers 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. Is K-humate® compatible with other products?

A. K-humate® is not compatible with many agricultural organic chemicals like insecticides, herbicides and fungicides. Due to the high reactivity of K-humate® and many of these organic chemicals, adverse reactions are likely to occur.

K-humate® is also not compatible with many fertilizers, particularly when the solution pH is acidic, or contains calcium or phosphate. It is compatible with UAN or urea solutions.

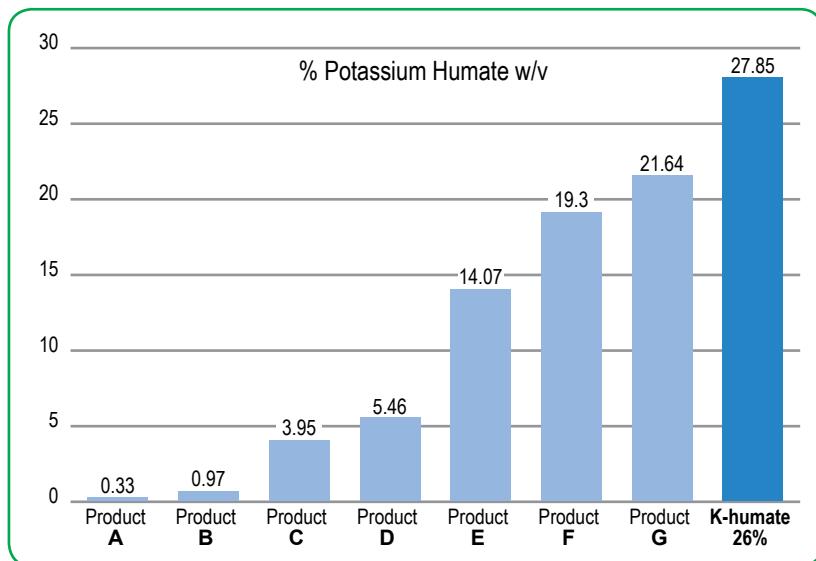
It is best to apply K-humate® on its own where possible to minimize risk.

If mixing with other liquid fertilizers, test for compatibility with a small quantity in a jar.

Quality is critical!

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.



- Recent independent testing of various humate liquids, using the CDFA method of analysis, showed that some products had less than 2% of humate claimed on the label.
- Concentrations varied from between 27.8% w/v potassium humate in Omnia's K-humate 26% to as little as 0.33% in some other products.

Typical Analysis % (wt/vol)

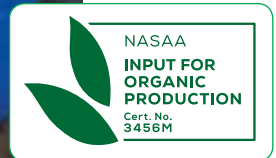
Potassium Humate 26

Potassium (K) 5

It is imperative to stick with a reputable company that can provide independent lab analysis of their product.

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.



Availability

K-humate® liquid is available in 20 litres, 200 litres, 1000 litres, bulk tanks and mobile tankers.

Visit our website: www.omnia.com.au for further information on K-humate® and Omnia's other Nutriology products

K-humate – *Most concentrated liquid humate*
Our strength – your profit

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