



TECHNICAL SHEET

<b>Humic Acid</b>		
<b>SPECIFICATION</b>		
<b>Model</b>	<b>GTHA-1501</b>	<b>GTHA-1502</b>
Appearance	Powder&Ball	Powder&Ball
Size	80mesh &2-4mm	80mesh &2-4mm
Humic Acid	40%	50%-55%
Organic Matter	> 90%-100%	> 80%-100%
Water Solubility	Insoluble	Insoluble
Moisture	25%	25%

**Humic Acid** is formed by microbial degradation of the dead biological substances for thousand of years. Its specific properties and structure depends on a given sample source from water or soil to extract the specific conditions. However, while the humic acid is different sources, the performance is very similar. Humus in soils and sediments can be divided into three main parts: humic acid (**Humic acid, HA**), fulvic acid (**fulvic acid, FA**) and humin (**humin, HM**). HA is insoluble and can be extracted out by alkali solutions, it is not soluble in water and acid itself, FA is soluble in alkali, water and acid, HM is not soluble in alkali, water & acids.

#### BENEFITS

##### Effect to soil

Largely promote the buffering power and fertility of soil by improving the structure and increasing its organic matter in sandy soil, humic acid helps to improve fertility of soil through its exchange ability to retain water and beneficial micro nutrients. In heavy and compact soil, humic acid works with fungi to construct a crumb structure root to absorb water oxygen and nutrients, improve root penetrations

Neutralize both acidic and alkaline to make it into a optimized soil environment with PH 5.5-7.0. In alkaline soil, beneficial ion and other trace elements cannot be absorbed by plants, humic acid can buffer PH and convert the nutrients and trace elements into absorbable form and promote their uptaking by the roots in acidic soil, it largely reduces the toxic substances such as the ally aluminum and heavy metals, which will be bonded firmly and



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immobilized, thus their toxicity is reduced and phosphate is bonded by aluminum is released. In saline soil, salts are spilt up by the high cation exchange capability, cation (eg. Ca, Mg) are bonded and chelated. Foster proper environment for soil microbial mass, soil research shows that a place with higher content of humic acid will appear more beneficial microbial mass. Thus these microbial will help in increase soil conditions.

#### Effect to seeds and roots system

Humic acid works as natural seed germination and root stimulant. Promoting germination of seeds and growth of root. It stimulates the membrane of seeds to form a strong roots.

#### Effect to plants

Largely optimized the absorption of beneficial ion by plants thus increase plants growth accordingly increase the yield and fruits quality. Based on improved structure by humic acid Nitrogen is largely stored and released in a slower way. P is released from AL<sup>+</sup> in soil, also makes other microelement in the form of easy-available by plants, meanwhile the beneficial fungi is active to produce different kind of enzymes, with the above joint effort, the yield will increased 30%. Enhanced cell assimilation as well as photosynthesis increase the plants sugar and vitamin content.

Enhance plants' ability to counter stressed conditions. Humic acid can mobilize Potassium absorption to regulate the stomata open and close on the leaves also promote metabolism to increase the plants ability under stressed conditions.

#### Effect to yield

Help to the growth of chlorophyll to promote photosynthesis, which helps to improve the accumulation of sugar, fat and amino acid in plants to promote roots and tubers, increase production, improve quality. Humic acid can enhance cell growth and help promote photosynthesis, thereby increasing the vitamin content of sugar and fruit crops, moreover, humic acid can chelate heavy metals in soil to avoid being absorbed by crops or plants, yield and quality will be greatly improved.

#### Packing:

25kg/bag, 40kg/bag or super ton bags