



CARBOTECH™

Group 2 Fertilizer

Product description:

- A dark brown to black viscous liquid with an acidic odor.
- Carbotech™ is a unique blend of complex carbohydrates derived from photosynthetic organisms, consisting of five distinct functional groups.

General information:

- Carbotech™ is a sophisticated carbon source that is completely soluble and is compatible with all commercial fertilizer products.
- Carbotech™ boosts effectiveness of nutrients in fertilizers, soil and irrigation water, due to its chelating and complexing properties.
- Carbotech™ has a Total Exchange Capacity which is similar to high end organic acids, like Fulvic acid
- Carbotech™ has a high affinity for the phosphate radical and protects it from the usual Calcium Phosphate lock-out in the soil.
- Carbotech™ is a root growth stimulant.
- Carbotech™ promotes soil microbial life and is high in biological assimilable carbon.
- The beneficial carbonaceous bacterial food source available in Carbotech™ promotes the bio-life in the soil to thrive and assist in the promotion of root development and root health to give natural defence against attacks on plant health

Modes of Action

- The high total exchange capacity of Carbotech™ allows for beneficial carbon bindings that reduces mineral leaching and lockout resulting in increased nutrient availability for the plant
- The root growth stimulants, as well as organic Phosphate clustering (reducing phosphate lockout and making it more mobile in the soil) allows for superior root growth.
- The beneficial carbonaceous bacterial food source available in Carbotech™ promotes vigorous bio-life in the soil. These symbiotic relationships with the plant have a beneficial impact on plant health, nutrient uptake, nitrogen fixation and the ability to release minerals from the soil.

Product specifications:

Packaging:

25 kg plastic containers, 1000l "flow-bins" or bulk containers.

Properties:

pH.....2-3
 Appearance.....dark brown/black liquid
 Residue (0,5mm).....none
 Specific gravity.....1,23

Typical Analysis:

N	5.00 g/kg
P	0.40 g/kg
K	0.10 g/kg
Zn	102.00 mg/kg
Cu	72.40 mg/kg
Fe	53.00 mg/kg
Mn	111.00 mg/kg
Mg	27.00 mg/kg
S	39.00 mg/kg
Organic Carbon	270.00 g/kg

Approaches in Recommendation:

General

- Carbotech is applied in relation to the amount of nutrients applied in each case.
- CFT has developed individual norms for the different elements.

Tree Crops

- The approach with tree crops is to get the various elemental nutrients into the tree more efficiently. This allows us to maintain ideal leaf norms over time, whilst applying substantially less fertilizer, resulting in a saving on fertilizer program cost in most cases.
- A normal fertilizer recommendation is converted to a Carbotech Program that will indicate the nutrient savings and Carbotech application rates.
- Program conversions are complex and requires input from a CFT Agronomist in order to ensure the nutrients are reduced by the appropriate amount according to our developed norms, and that the nutrient elements are balanced (after reduction) in accordance with the phenological phases. (Contact CFT head office to assist with these requirements)

Annual Crops

- Carbotech is applied in addition to the normal fertilizer program. The improved nutrient uptake generally results in a yield increase. The value of the yield increase generally exceeds the on cost by far, resulting in an economic benefit to the farmer. (see www.cft-sa.com "Our Results")
- Carbotech is generally NOT applied with a planting mix. The reason is that soil microbes need a root zone to flourish.
- Ideal application is with each fertilization. Rates are available for various fertilizers types (Urea MAP etc.) on www.cft-sa.com under "Resources" / "Carbotech Calculator"
- If application is not done with fertilizer application, then the first application is typically done 2-3 weeks after emergence and two to three times thereafter. (The principle is to try and stretch the application over as long a period as possible and to apply the larger quantities earlier. Application can be split in the following ratios: 40/30/30 or 40/20/20/20)

Storage:

Store in a cool, dry area away from direct sunlight.