CARBON FERTILISER TECHNOLOGIES

EFFECTIVE AGRICULTURE TO PROSPER HUMANITY

C.F.T.

NO 02-09

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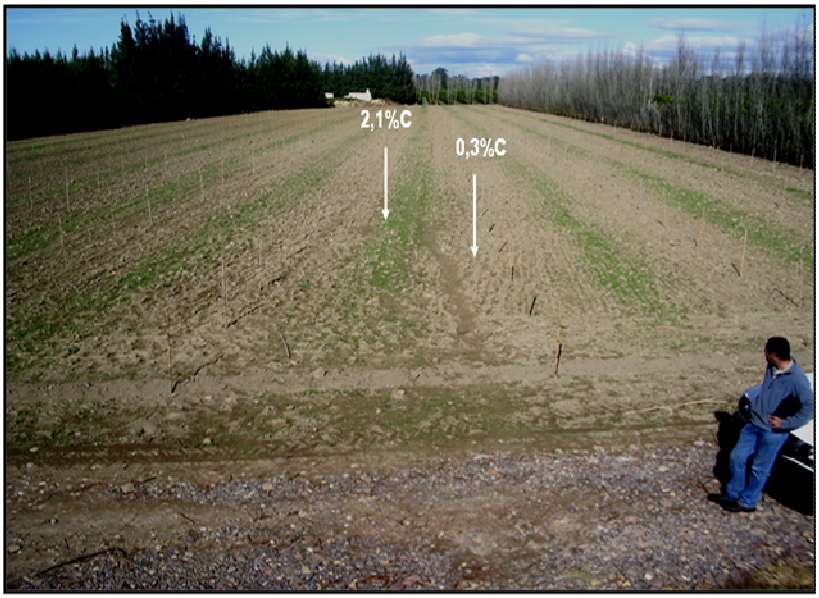
TRADITIONAL AGRICULTURAL PRACTICES AND SOIL FERTILITY:

There is a direct correlation between soil fertility and the effectiveness of plant nutrition. The reason is that the organic components in soil micro promote life, which improved soil structure and increase water retention. The micro life function in symbiosis with the plant for minerals available / more assimilated to (eg, urease, which is converted to urea nitrate). ‘n Voordelige mikro organisme populasie verminder ook grond gedraagde siektes deur op te tree as ‘n buffer teen die nadelige mikro organismes. In general, the farmer only complicates himself with two aspects of soil, the chemical and physical. The Biological aspects are nowadays addressed by things like compost tea, biological farming practices and so on. The irony is that the process of soil improvement starts by micro organisms. If it was to be stimulated, it improved soil structure, and the improved integration of chemical nutrition follow.

When one wants to improve micro life, the study of carbon becomes very important. Micro organisms need a good source of carbon. For example, in the Knysna forest, you will get carbon exclusively from the plant remains themselves. By contrast, in a commercial farming environment affected the chemistry of the micro organisms and farming practices deprive their addition of a source of carbon. Here is an example of a peach orchard, which was recently removed, soil corrections was done and the orchard is now ready for re-planting (see marked out pins) The problem is that as a result of traditional management practices, the carbon on the ridge has been exhausted and now again it is planted. This all happened in a 20 year period!



SOIL FERTILITY AND NUTRIENT UPTAKE:

The farmer is left with a dilemma and it is that he must feed the tree with costly chemical fertilizers to achieve a economically viable crop, despite the fact that most of the nutrients is not even absorbed by the plants. Here is a graphical representation of Nitrogen uptake in a destructive test, in America, that was done to determine the % Nitrogen uptake.

BIOLOGICALLY DEGRADABLE CARBON
THE PLANT NUTRIENT TECHNOLOGY OF THE FUTURE

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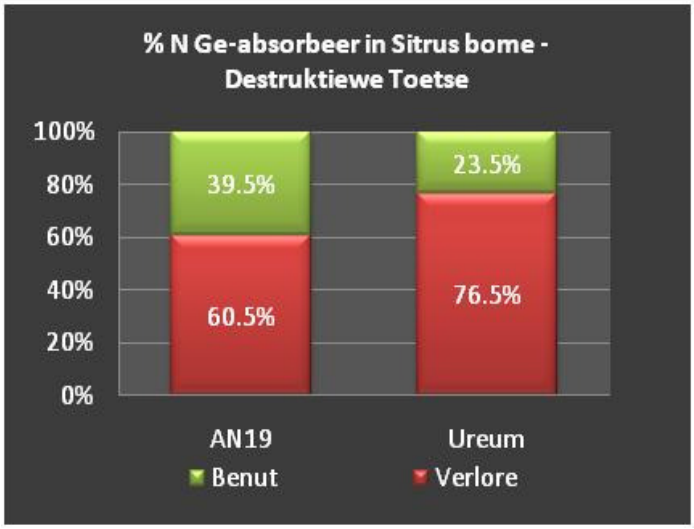
It is clear that the farmer will obtain a substantial economic advantage if he can minimize the nutrients that are wasted. If the farmer, for example, supplies enough nutrients to obtain the optimum yield, in spite of the losses in the soil, there is a cost advantage available through the reduction of these losses. Where the farmer does not fertilize for optimum yield, there is a potential improvement in the crop that may be realized because there is more food for the plant to absorb.



The farmer's enemy in this regard is bad ground ("dead ground") with low water retention capacity and cation exchange capacity (CEC). The application of a suitable carbon source addresses both problems, in that it promotes microbial life, which in turn promote soil and water retention, and that a high CEC which reduces leaching by binding with plant nutrients and soil particles.

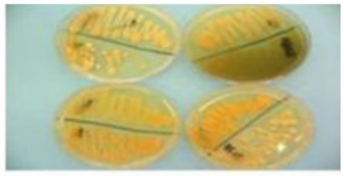
CHARACTERISTICS OF A GOOD CARBON:

The following is the characteristics of a carbon source, that is suitable to improve soil fertility:

1. It must be able to be utilized by micro-nutrients. (Biologically degradable.)
2. It must have a high "CEC".
3. It should be fully soluble and should not precipitate (to make it easily operational and not to bring any disadvantages to your irrigation system)
4. It must effectively bind with the chemicals.
5. It should easily penetrate the soil. (To effectively penetrate the root zone).

Cation Edurance:

Name:	CEC(cmol/kg)
Sand	1-5
Sand-loam	5-10
Silt Loam	10-15
Clay Loam	15-30
Heavy Clay	0-60
Compsost	25-35
Humus	200-400
Peat	10-30
Lignite	25-30
Coal	0.92
Charcoal	2.83
Humic Acid	400-600
Fulvic Acid	1000-3000



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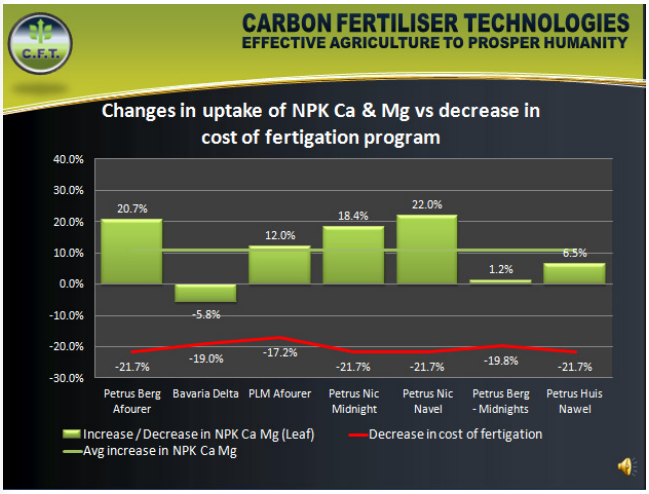
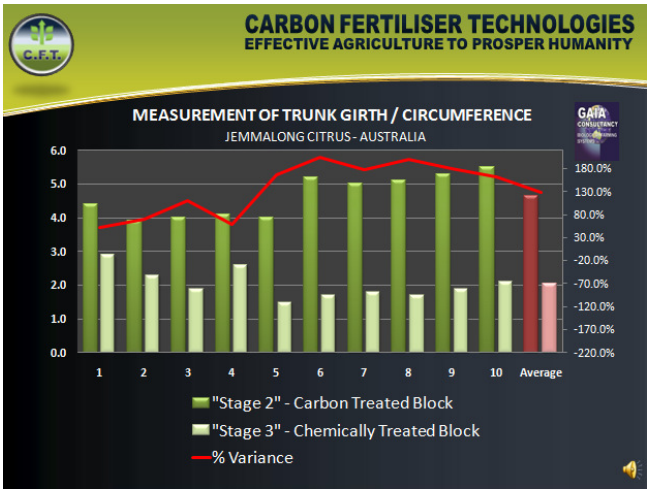
PRACTICAL RESULTS OF CFT'S BIOLOGICAL ASSIMILABLE CARBON (BAC) BASED FERTILIZERS:

The above statements are clearly supported by practical results in the field. Here are some examples of cases where cost advantages or yield advantage were recorded.

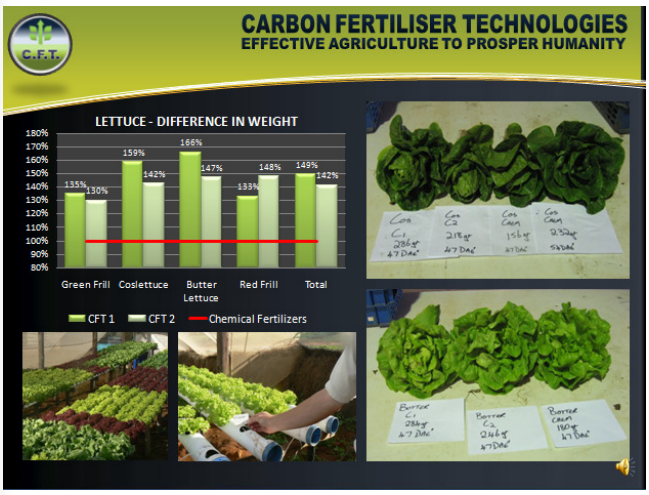
SAVINGS ON CITRUS



IMPROVED GROWITH IN CIRTUS



IMPROVED RETURN ON CASH CROPS



IMPROVEMENTS RECORDED WITH CUCUMBER TRIAL