



CARBOTECH™

ON FARM DEMONSTRATION - 2013

**COMMERCIAL CARROT PRODUCTION, MR. PIETER JAN VAN ZYL, FARM –
DROOGEVALLEI, WESTERN CAPE, SOUTH AFRICA**

TRIAL AIM

CARBOTECH is a liquid carbon product derived from plant extracts. CARBOTECH is useful in improving the efficiency of plant nutrient uptake.

The CARBOTECH mechanisms of action are as follows:

1. CARBOTECH will bind with nutrients and protect it from lock-out in the soil or from leaching and volatilization.
 - a. Cat-Ions such as Ammonia, Potassium, Calcium and Magnesium binds with CARBOTECH to form larger molecules, aiding in reducing leaching through the soil.
 - b. Anions such as Phosphates binds with CARBOTECH in 'n proses called organic Phosphate clustering protecting it from Calcium / Phosphate lockout.
2. CARBOTECH will improve root growth by stimulating cell division and growth as well as having a positive effect on phosphate availability and mobility
3. The beneficial carbonaceous bacterial food source available in CARBOTECH promotes the bio-life in the soil to thrive and assist in the promotion of nutrient uptake, root development and root health to give natural defence against attacks on plant health

On dairy pastures a strategy of a reduction in application of Nitrogen or one of improved yield could theoretically be achieved. A combination of the two strategies might also be possible.

In this particular case CARBOTECH was applied on a farm that has successfully reduced the use of Nitrogen from as high as >800kg N p.a. to 230kg N p.a. The aim therefore is to see if the addition of CARBOTECH and the expected improvement in the utilization of applied nutrients will translate into an improved yield

FIELD TRIAL SETUP

The on farm demonstration was undertaken in order to demonstrate the effect of CARBOTECH on yield of commercial carrots. The Dhordhone variety was planted at a rate of 1.2 million seeds per Ha on 1 March 2013

A 2.54 Ha centre pivot, divided into two halves was selected. CARBOTECH was applied to one half namely 1.22 Ha and the other half was left as a control. This allowed for the application of the exact same treatment for trial and control as the fertilizer would be uniformly applied. CARBOTECH was applied at the rate of 15 litres per application in weeks 2, 4 and 8 after planting



SUMMARY OF RESULTS

The following are the results obtained from the measurements of the trial:

Detail	Total tonnage	Tons per Ha
Control	70,037	57,170
CARBOTECH Trial	104,247	85,090
Positive Variance	34,210	27,920
% Improvement	49%	49%

The cost of the CARBOTECH applied in the trial amounts to R2227.50. It is obvious from the above that the economic benefits outstrip the cost many times over.

The farmer's comments were as follows:

"There was a small perceptible difference in the growth of foliage during the growing phase. There was however a massive difference in the amount of underweight carrots as well as the individual weight of carrots of the same size In favour of the trial. At harvesting there was a perceptible difference in both sizes and weights."

CONCLUSION

From the results obtained from the application and measurements, it is apparent that CARBOTECH is useful for increasing yield and size in commercial carrot production on the short term.

ACKNOWLEDGEMENTS

We would like thank Mr Pieter-Jan van Zyl for affording us the opportunity to do these trials on Droogvallei and for the meticulous measurements and control that allowed the recording of these results.