

## **The Effect of Fertilization with KF-20 on Yield and Quality of Organic Carrot Crop**

Kibbutz Ramat David, Spring 2005

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### **Introduction**

For two years, methodical observations have been made to study the effect of the fertilizer KF-20 on the yield and quality of various commercial organic crops.

Due to various limitations and the size of the plot, the trials were one-off observations with no repetitions. In each observation, five samples were collected from the control plot and the trial plot. The samples were taken randomly, and in each trial and the harvest, an instructor from the Israel Bio-Organic Agriculture Association participated in order to ensure the reliability of the results and to be certain they did not deviate.

In our opinion, despite the problematic nature of observations on commercial plots, similar results that were obtained in a series of observations improve the reliability of the results even though it is not possible to carry out statistical analysis on this type of observation as is usually done.

Carrot is one of the organic export crops that in recent years enjoyed a good period with a significant increase in export prices, when two years ago it almost disappeared completely. One of the reasons for its return to the arena is the significant increase in the quality of the product, the result of strict harvesting, sorting and packing procedures which had caused most of the damage to the product. But beyond these procedures, it is very important to improve the quality of the actual crop in the field.

The KF fertilizer is thought to improve efficiency in the absorption of nutrients and affect the yield and quality of the export carrot crop. In an observation conducted last year in the fields of Kibbutz Maale Gilboa, an additional yield of around one and a half tons per 1,000 m<sup>2</sup> was obtained, with a significant increase in carrot size that suits export requirements.

The present observations were conducted to check the consistency of results at a different time and place, to increase our confidence that treatment with KF does indeed affect the yield and quality of the carrot crop.

## **Methods and materials**

Variety: Namur

Sown on: 10.11.2004

Sowing density: 80 seeds per meter, in rows

Base fertilizer: 4 m<sup>3</sup> compost

Supplemental fertilizer: 25 kg guano per 1000 m<sup>2</sup>, before sowing

**Treatment:** KF-20 applied to foliage. For each application a quantity of 1 liter of fertilizer diluted in water, sprayed on at a volume of 30 liters per 1000 m<sup>2</sup>, with the control plot not treated.

**Treatment dates:** 20.1.2005, 20.2.2005 and 20.3.2005.

The trial was carried out on a commercial crop. The fertilizer was applied as a spray on a strip of 7 plots in the center of the field. For marketing reasons, the harvest was brought forward by a number of weeks, which affected the yield of the entire plot, but allowed the crop to be marketed during the season in which there was increased demand in the export markets.

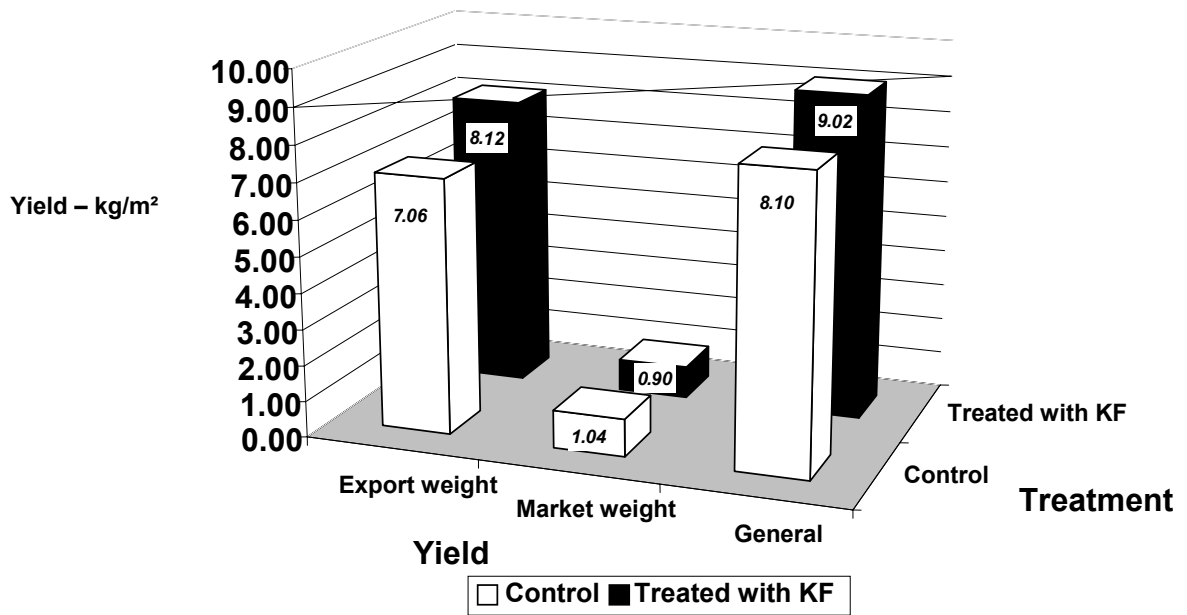
One day before the commercial harvest, five plots were sampled of one meter length from the control area and the treated area.

The results are presented as the average of the sample plots corrected to 1 m<sup>2</sup> (1 kg per m<sup>2</sup> is equivalent to 1 ton per 1000 m<sup>2</sup>).

## **Results:**

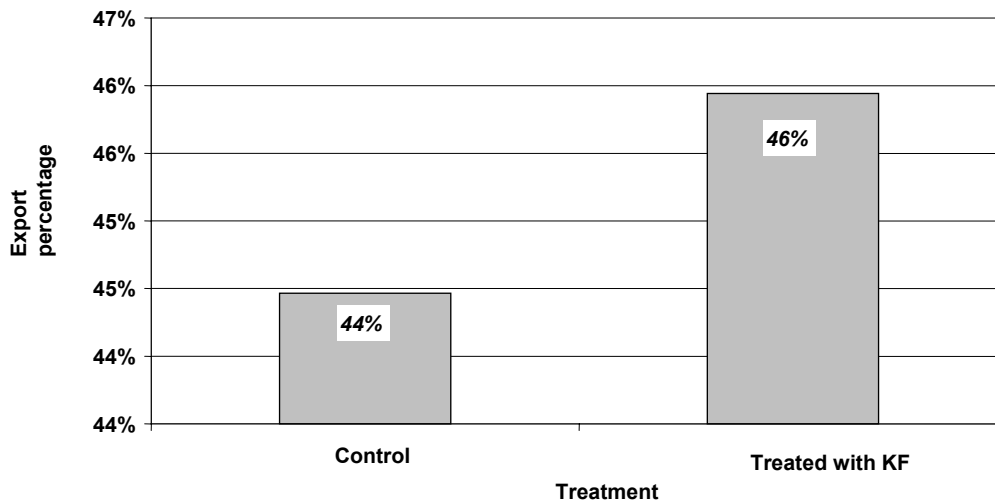
**Yield:** An advantage of around 1 kg per m<sup>2</sup> was noted in the treated plots compared to the control plots. This means an advantage in yield of around 15% in the export crop and around 11% in the general crop. An advantage in the quality of the produce was also noted, which was seen in a relative increase in the export crop compared with a certain decrease in the crop for local market under the influence of the treatment.

**Diagram 1: The Effect of KF on Carrot Crop for Export and Local Market, Kibbutz Ramat David, May 2005**



The Effect of KF-20 on Carrot Crop, Kibbutz Ramat David, May 2005

**Diagram 2: The Effect of KF on Size of Carrots for Export, Kibbutz Ramat David, 2005**



KF observation on carrot crop, Kibbutz Ramat David, 2005

**Conclusions:**

This is the second consecutive observation in which a significant advantage was obtained in the yield and quality of the carrot crop treated with KF. This result is supported by other observations that were carried out recently on paprika and potato crops, all of which show an improvement in yield and quality as a result of treatment with KF. These results, all positive, support the assertion that the application of KF should be positively considered, and is expected to affect the yield and quality of the marketed produce.