The Effect Of KF 20 and KF AMINO Application on Table Grapes

Part 1: General information

KF 10 and KF AMINO are plant nutrition products developed and produced by VGI Israel. The unique formula reflects 25 years of studies and trials, and is proved suitable and effective for wide range of crops. The KF products are strong and effective bio – stimulants, composed of plant extracts, amino acid extracts, plant oils, sea weed, enzymes, sugars and proteins, as well as natural stabilizers. All ingredients come from strictly natural, non GMO sources

Mode of action and effects of use:

Application of the KF products is designed to optimize plant nutrition intake, foster root system development, improve plant cell structure and improve efficiency of minerals transfer in the plant tissues. The combination of plant oils and extracts act also as efficient surfactants.

Application of KF will have positive effect on the function of the Chloroplasts, thus enhance the energetic balance of the whole plant. Proper application will result with improved growth, strong flowering, improved resilience and most important – improved yields.

Applications in Vineyards:

KF products are used in commercial table grape vineyards for many years. Growers report on following benefits: Better sizing, improved sugar content, increased berry weight, improved coloring, Improved yields and higher fertility rate of the vine, Improved resistance to decay after the harvest.

Application program for table grapes is based on the **Embryo Nutrition** concept: application of high quality nutrition materials at time of increased cell division. You can read more about the concept in VGI web site www.vgi-agro.com.

The following basic application is recommended for table grape cultivation:

- Post Harvest application: 1 L/Ha KF 20 to roots via drip irrigation.
- Bud brake application: 1 L/Ha KF 20 to roots via drip irrigation.
- Pre – bloom applications: 2* 0.5 L/ha KF 20 by foliar spray or drip irrigation.
- Post fruit set to mid verasion applications: 0.25 L/Ha per week to roots (via drip irrigation).
- Pre Harvest application: 0.5 Liter/Ha KF 20 + 5 L/Ha KF AMINO by foliar spray.

In red table grapes where Ehtrel is used for color enhancement it is highly recommended to combine it with the KF pre harvest applications. This will result with better coloring and stronger berry.

The Effect of KF 20 on yield of Early Sweet table grapes, Jordan Valley vineyard 2016 - 2017:

This trial is held at “Arbec” vineyard in central Jordan valley. The control group is the standard grower’s protocol.

T1 is grower’s protocol + 4 drip irrigation applications of KF 20 at rate of 1 L/H at following stages: Post Harvest, Bud Break, Post fruit set, Mid variason.

T2 is grower’s protocol + T1 + pre flowering spray and pre harvest spray at rates of 0.5 L/ha + 5 L/Ha KF AMINO.

During autumn of 2016 both T 1 and T2 plots received 1 L/Ha of KF 20 through the drip irrigation.

In each treatment 4 random samples were taken to Jordan Valley Extension Service laboratory for analysis, at the beginning of 2016 harvest and at the beginning of 2017 harvest. At the lab, 30 berries were randomly selected from each sample, and tested for weight, sugar content (TSS level) and diameter.

Results are shown in following tables and graphs.

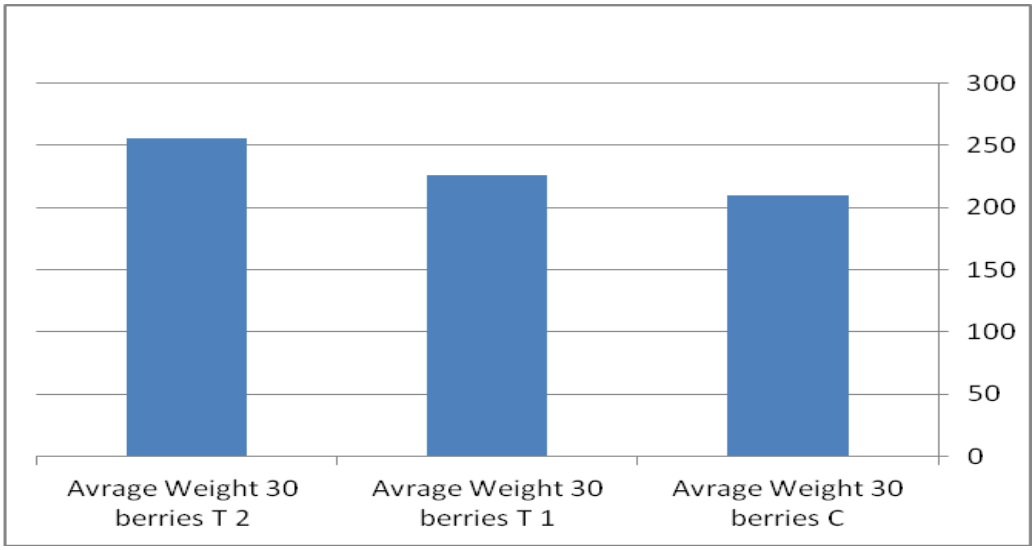
Table 1: 2016 fruit parameters

	Average TSS	Average weight (30 berries	Average diameter
Control	14.6	210	1.902
T 1	15.45	225.875	2.02
T 2	14.75	255.99	2.019
% added T 1 vs Control	5.8%	7.55%	5.2%
% added T 2 vs Control	1%	21.9%	6.1%

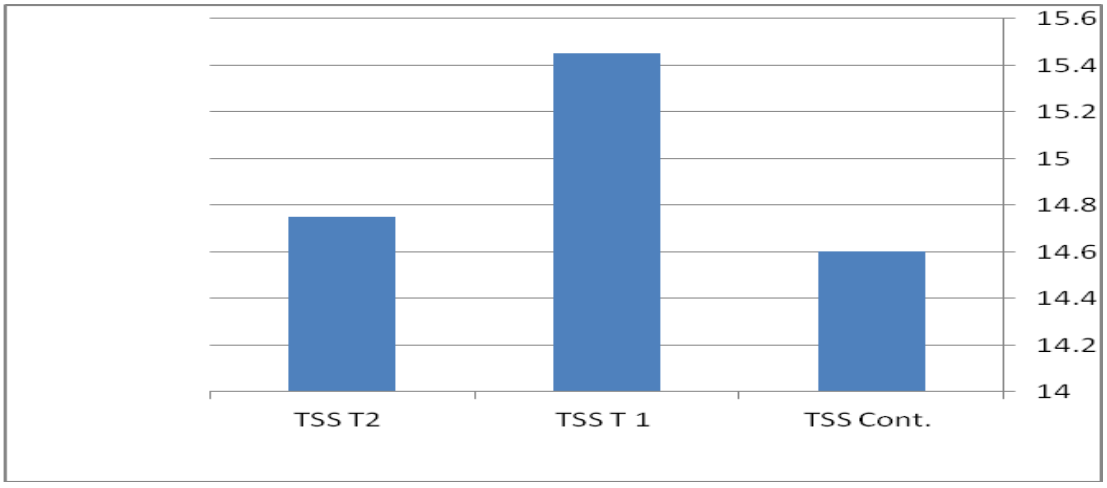
Table 2: 2017 fruit parameters

	Average TSS	Average weight (30 berries)	Average diameter
Control	13.77	174.455	1.908
T 1	13.95	219.7	2.065
T 2	14.3	219.135	2.077
% added T 1 vs Control	4%	25.6%	8.8%
% added T 2 vs Control	1.3%	25.9%	8.2%

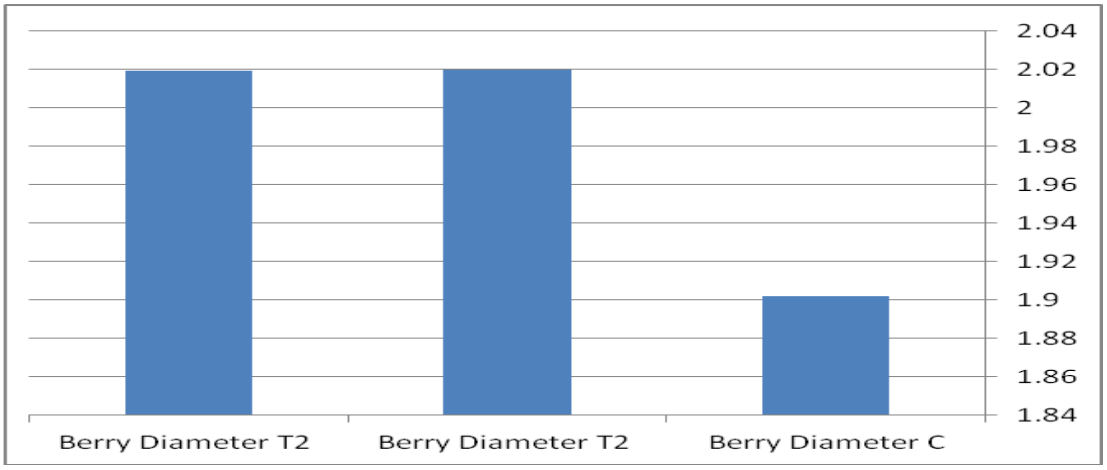
Graph No. 1: average weight 2016.



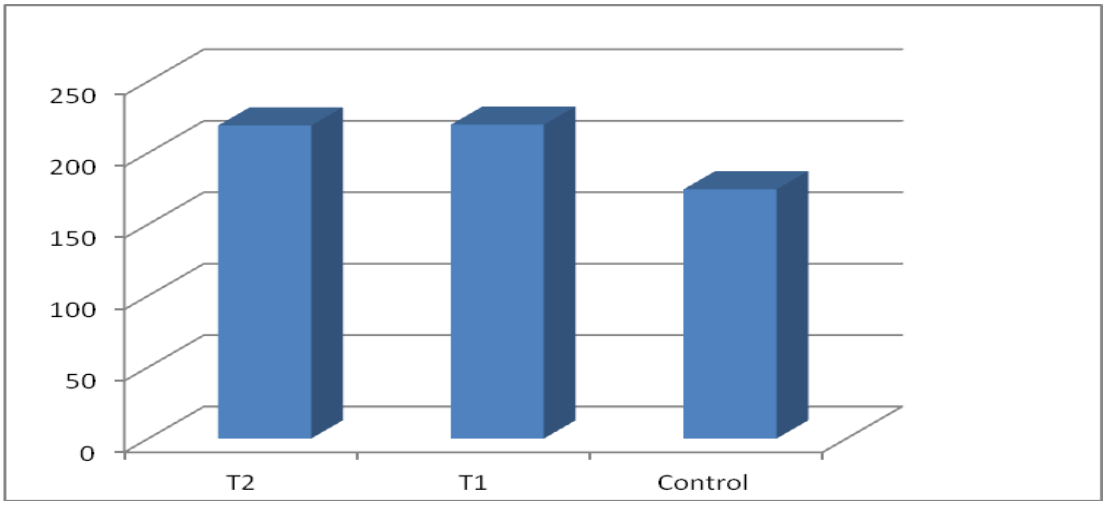
Graph No. 2: TSS content 2016



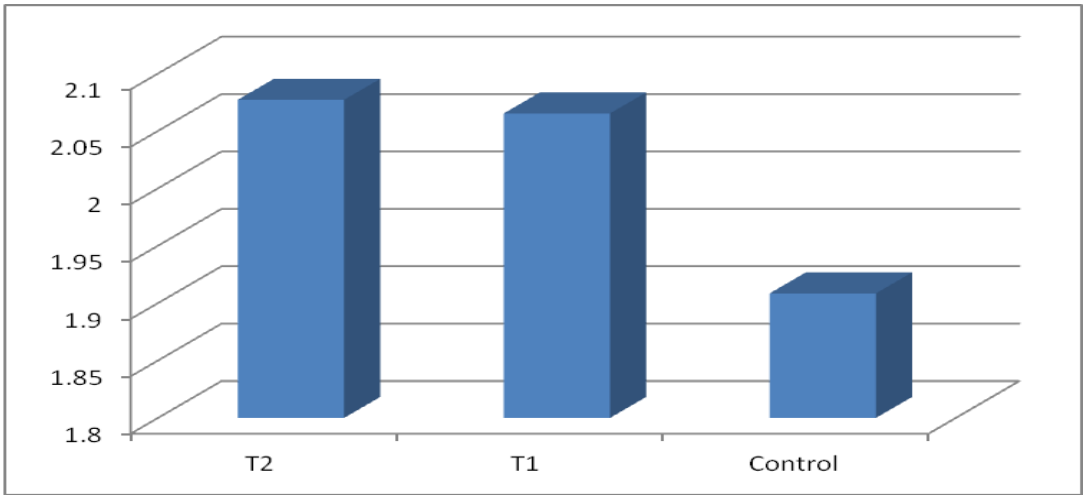
Graph No. 3: Berry diameter 2016



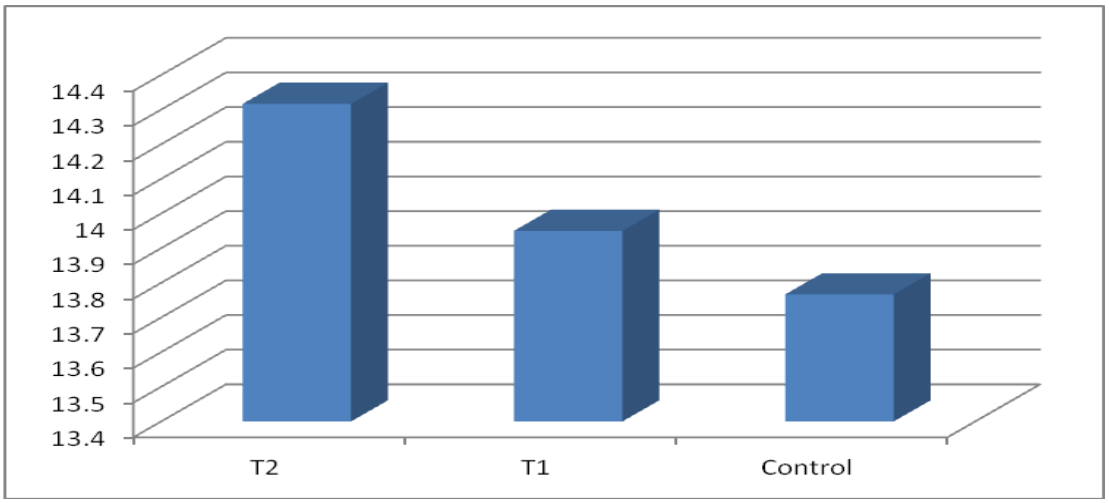
Graph No. 4: average weight 2017



Graph No. 5: average diameter 2017



Graph No. 6: TSS levels 2017



Summary of findings – major trends:

- In both years the treatments contributed to significant increase in berry weight. In the first year of the treatment, it was the combined spray with AMINO that gave the strongest effect. In the second year though, it appears that the treatments to the root system are the most effective.

- The treatments contributed to increase of berry size. However, the rate of this increase in both years is much lower than the rate of added weight. This shows that the berry weight increase is not a direct result of size, but rather higher specific weight of the berry.

- In both years both treatments yielded higher sugar content at the harvest. In the first year it seems that the weight increase came on the expense of the sugar content. This suggests that due to accelerated growth in a short period, fruit maturing process was slowed. In the second year however, this trend is not repeated - the TSS level in T 2 is the highest. This suggests that the accelerated growth of the berry was a slower process, and the AMINO did contribute to accelerated maturity, as expected.