SCD Probiotics®

Case Study Summary – Tomato trial in Amasya, Turkey

Agriculture – Crop yield and brix (CSS-001-2015)

Industry: Agriculture
Application: Tomato (drip irrigation)
Customer: SCD Probiyotik
Where: Amasya, Turkey
When: June - July 2015
Products: SCD Bio Ag®

Background

Being consumed in many ways (raw ingredient for salads, dishes, drinks, etc), tomatoes are in very high demand and therefore production worldwide. Turkey produces 7 million tons of tomatoes in 160,000 ha of land per year and occupies 7% of the world's production. A trial was conducted in Amasya, Turkey to see the benefits of SCD Bio Ag® for the brix and yield on tomato cultivation. The aim of this study is to evaluate SCD Bio Ag's effectiveness in tomato production by determining yield, pH and brix characteristics.

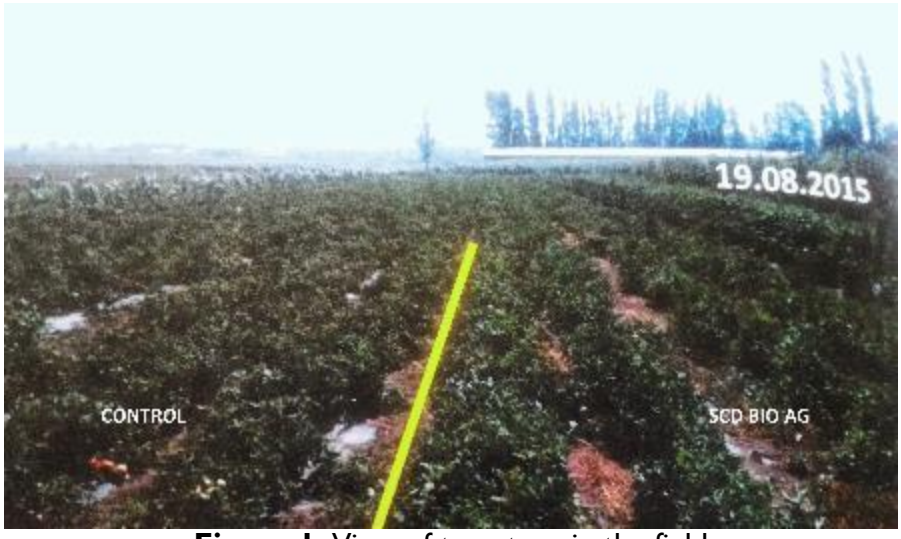

Figure 1: View of tomatoes in the field

Methodology

The trial was conducted on tomato (Troy seed) that is planted on 1 da field (see Figure 1). The first SCD Bio Ag application was done at the end of the 1st month after seeding at a 1500 ml/da dose. The second application was done one month later at a 1000 ml/da dose with drip

irrigation. The drip irrigation system was set up to deliver water periodically during the day. Tomatoes applied with SCD Bio Ag. The control field was irrigated with water.

Results

At the end of the trial the yield difference between control and trial group was 2000 kg/da. The brix of trial group was 7.1 °Bx while the control was 6.3 °Bx. The pH of tomato on trial group was 4.27 while the control group was 4.19. For the brix measurement the ripe fruit tissue was homogenized and the soluble solids (brix) content of the resulting juice was measured on a portable refractometer (Figure 2). Measurements of brix and pH in the lab are shown in Table 1.

Figure 2: Measuring brix and pH in the lab

Also the tomatoes in trial group were healthier with higher fruit set than the control group.

Table 1: Results of analysis (done by Olca Tomato Paste Factory) with and without SCD Bio Ag

Parameters	SCD Bio Ag	Control
Yield (kg/da*)	11,000	9,000
Brix (°Bx)	7.1	6.3
pH	4.27	4.19

*1 da is equal to 1000m^2

Conclusion

After experimentation, data showed that tomatoes with SCD Bio Ag showed more yield (11,000 kg/da).

Brix is the measurement of the Total Soluble Solid (TSS) content (sugars, proteins, amino acids, etc.) in fruit or vegetables as measured by a refractometer. The TSS in tomato is mainly sugars (Fructose). High brix of tomatoes also means the soil nutrients are well-balanced since the Brix indicates the level of balance of nutrient update. Brix on tomatoes with SCD Bio Ag was 7.1 °Bx and higher than the control group's brix level (6.3 °Bx).

A normal pH range in tomatoes is 4.0 – 4.5 and the lower pH means more tart or sour the fruit. The pH of tomatoes with SCD Bio Ag was 4.27 and higher than the control group's pH level (4.19).