

### 3.3 MARJA TURAKAINEN

Sugar Beet Research Centre, Toivonlinnantie 518, FIN – 21500 Piikkiö

## **WHAT IS THE RIGHT LEVEL OF N FERTILIZATION FOR SUGAR BEET IN FINLAND**

### **ABSTRACT**

Nitrogen is the most important nutrient for optimum sugar beet growth. It has effect on plant early growth and full canopy closure. Large canopy allows plants to utilize the sunlight's energy more efficiently. Excess N at the end of growing season reduces sugar beet quality by increasing amino-nitrogen concentration of beet roots. Since last couple of years some of the sugar beet areas in Finland are turning yellow very early during the growing season. This has raised the question about the N fertilization rates. The maximum N rate 140 kg/ha for sugar beet is determined by The Finnish Agri-Environmental Program, however the average use rate by the farmers at the moment by the statistics is between 90 to 100 kg/ha.

The aim of the study was to indicate actual crop need for N in Finland. The application levels of N were 90, 110, 140, 160, 200 and 220 kg/ha. The trial was fertilized by the common system used in Finland. NPK-fertilizer was placed during the drilling into the separate row. Extra N was also replaced during the drilling. The trial was carried out in the two trial sites with clay and loam soils for three years. The root yield and quality were determined with different nitrogen levels.

---