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DIVIDED N FERTILIZER USE DURING THE GROWING SEASON

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 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 find out how the divided N fertilizer use could increase the sugar beet yields in Finland. The application levels of control fertilization were 90, 110, 140 kg N/ha. Divided treatments were drilled 25 kg N/ha less than controls. The 25 kg N/ha was added by surface application during the growing season, no later than beginning of July. The trial was carried out in the two trial sites with clay and loam soils for three years. The root yield and quality was determined with different nitrogen levels.
