



Importance of crop protection in sugar beet: research, monitoring and diagnostics

Bram Hanse¹, Elma Raaijmakers¹ and Martijn Pepping¹

¹IRS, P.O. Box 32, NL-4600 AA Bergen op Zoom

Abstract

One of the requirements of sustainable sugar beet production is profitability for the farmers. In a recent project the sugar beet research institute IRS studied the impact of grower type on sugar yield. In this SUSY (Speeding Up Sugar Yield) project 52 farmers (26 'type top' and 26 'type average') participated from 2006 to 2008 in a pair study. Each pair consisted of a 'type top' and a 'type average' farmer and were located across the Netherlands. During the project yields and causes of high or low yields were studied.

In each year the 'type top' growers had significantly 20% higher sugar yield compared to 'type average' growers, but their total variable costs did not differ. So, the observed differences in sugar yield were not caused by economic constraints (inputs). However, the 'type top' growers had lower infestation levels of various sugar beet pests and diseases and their calculated yield losses due to pests and diseases were lower (average of both 'type top' and 'type average' for whole study: 24%).

A major part (50%) of the variance in sugar yield was explained by the infestation levels of pests and diseases. Most important pathogens were *Heterodera schachtii*, *H. betae*, *Aphanomyces cochlioides*, *Cercospora beticola* and *Beet necrotic yellow vein virus* (BNYVV).

From the project it was clearly shown that the skills and management of the grower are important for reducing damage by pests and diseases. For a sustainable crop protection a proper diagnosis is necessary. Therefore, the IRS offers a diagnostic service including advices on damage thresholds from its research. Also this success chain and its advantages on Integrated Pest Management will be addressed during the presentation.