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INTERFERENCE OF *HETERODERA SCHACHTII* AND CANOPY HEIGHT IN SUGAR BEET VARIETY TRIALS

ABSTRACT

The white beet cyst nematode (*Heterodera schachtii*) is one of the most important pests in sugar beet in Europe. Varieties susceptible, tolerant or resistant against *H. schachtii* are available for growers. In previous studies it was shown that in variety trials interference between varieties occurs due to differences in canopy height. It is unknown whether *H. schachtii* may play a role on interference in variety trials as well.

Field trials were conducted in 2013 and 2014 at sites with high or very high nematode infestation in Belgium, Germany, Sweden and the Netherlands. In two different trial setups, the different variety types were grown to a) assess neighbouring effects due to canopy height or *H. schachtii*, and b) quantify the effect of different trial setups (harvest of 2 or 4 central rows or all 6 rows out of 6-row plots, or 3 rows out of 3-row plots) on yield performance of the varieties. The effect of the trial setup was additionally assessed based on data from variety trials from 2006 to 2013.

It was concluded that interference due to canopy height was larger than that by *H. schachtii*. Yield of the resistant variety was underestimated by 3% in a system, where 3 rows are sown and 3 rows are harvested. The susceptible variety was not influenced, but yield of the tolerant variety was overestimated by 9% as the tolerant variety could profit from the lower canopy of the resistant and susceptible variety. Nematode populations were influenced in border rows by the neighbouring effect in 2013 only, but this did not have an effect on yield. Although, yield of the resistant and tolerant variety was respectively under- and overestimated, resistant varieties did not perform better than tolerant ones in trials with different trial setups from 2006 to 2013.

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