Population development of beet cyst nematodes and their damage potential to sugar beets under different temperature regimes

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Heterodera schachtii, the white beet cyst nematode, is considered as one of the most important nematode pests on sugar beet and is present in most sugar-beet growing areas. The yellow beet cyst nematode, *Heterodera betae*, is less prevalent but has also been found damaging beet crops. However, knowledge about the damage potential and population dynamics of the yellow beet cyst nematode is limited. The amount of damage inflicted by nematodes is dependent on different factors. An important factor influencing the sugar beet yield decline by beet cyst nematodes is the soil temperature. Relationships between soil temperature, *H. schachtii* population densities and sugar beet yields have been reported previously. Until present, most studies have been conducted under constant temperatures. Since several studies have demonstrated that the population dynamics of many species are sensitive to small differences in temperature (1-4°C), we subjected in our pot experiment sugar beet plants (cultivar Monza) to 2 gradually increasing temperature regimes in separate climate chambers. Temperatures in the two climate chambers were increased from 8°C to 22°C and 12°C to 26°C, respectively. Results on the influence of soil temperature on the *Heterodera schachtii* and *Heterodera betae* population densities and sugar beet growth parameters are presented.