



## Soil suppressiveness to control the soil-borne fungal pathogen *Rhizoctonia solani*

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### Abstract

*Rhizoctonia solani* is a soil-borne fungal pathogen, which causes worldwide serious losses in many different agricultural crops. *R. solani* AG2.2IIIB is an economically important problem in sugar beet with an estimated affected area of 70,000 ha in Europe (<http://www.kwsbenelux.com>). Enhancement of soil suppressiveness against damage caused by this pathogen would be a profitable strategy for farmers to control *Rhizoctonia* diseases without applying pesticides. Addition of compost or other forms of organic matter are often used to stimulate disease suppression of soil-borne pathogens. However, this strategy is not reliable to control *Rhizoctonia*, since positive as well as negative results have been reported.

Previous research had shown that three closely related species of *Lysobacter* were present in different *Rhizoctonia* suppressive soils. Therefore, we focussed on stimulation of these bacteria, which are known for their capacity to degrade various biomacromolecules. Repeated experiments in bioassays with sugar beet seedlings showed that chitin, yeast, as well as several animal derived (waste) materials enhanced the indigenous *Lysobacter*-populations in the soil, as well as disease suppression of *R. solani* AG2.2IIIB. Feather meal and hoof meal, which were the cheapest products, were very effective and can also be applied as fertilizer. In 2012, the first field experiments have been performed to test the efficacy of these compounds when applied in low dosages during sowing. The results will be presented at the symposium.