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Bacterial communities in the cysts of the soybean cyst nematode and their potential in control of the nematode

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Soybean cyst nematode (SCN, *Heterodera glycines*) is the most serious pest problem in soybean production. This study is aimed to investigate the bacterial community in SCN cysts from different crop sequences and their potential for control of this nematode pest. Research was conducted at a long-term experimental field site established in 1982 in Waseca, Minnesota, USA. Soil samples were collected at harvest in 2014 and 2016 from the crop sequences (1) first year of soybean after 5 years of corn monoculture, and (2) soybean monoculture. Bacteria were isolated from the cysts by plating a dilution series of ground cyst contents suspension onto culture media: nutrient agar (NA), 1/10 strength nutrient broth yeast extract agar (NBYEA), tryptic soy agar (TSA), and actinomycete agar (AA). A total of about 800 bacterial isolates were obtained. The bacterial isolates will be identified by sequencing the 16S rDNA and the crop sequence effect on the bacteria community will be analyzed. Liquid cultures of the bacteria in the tryptic soy broth (TSB) were screened for their toxicity to the SCN second-stage juveniles (J2) *in vitro*. Experiments are also underway to test the effect of the selected bacteria on SCN infectivity and their potential as biocontrol agents.