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[Höss S](#), [Arndt M](#), [Baumgarte S](#), [Tebbe CC](#), [Nguyen HT](#), [Jehle JA](#).

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The effects of the insecticidal Cry1Ab protein from *Bacillus thuringiensis* (Bt) on the nematode, *Caenorhabditis elegans*, were studied with soil from experimental fields cultivated with transgenic Bt corn (MON810) and with trypsinized Cry1Ab protein expressed in *Escherichia coli*. The content of Cry1Ab protein was above the detection limit of an ELISA test in only half of the soil samples obtained from transgenic plots, ranging from 0.19 to 1.31 ng g(-1) dry weight. In a laboratory bioassay, *C. elegans* was exposed to rhizosphere and bulk soil from fields with isogenic or transgenic corn or to solutions of Cry1Ab protein (0, 24, 41, 63, 118, and 200 mg l(-1)) over a period of 96 h, with growth and reproduction serving as the test parameters. Nematode reproduction and growth were significantly reduced in rhizosphere and bulk soil of Bt corn compared with soil from isogenic corn and were significantly correlated with concentrations of the Cry1Ab protein in the soil samples. Moreover, the toxicity of pure Cry1Ab protein to the reproduction and growth of *C. elegans* was concentration-dependent. As significant inhibition occurred at relatively high concentrations of the Cry1Ab protein (41 mg l(-1)), the effects of the soil samples from Bt corn could not be assigned directly to the toxicity of the Cry1Ab protein. The results demonstrate that bioassays with the nematode, *C. elegans*, provide a promising tool for monitoring the potential effects of Bt toxins in aqueous medium and soils.

PMID: 18068780 [PubMed - indexed for MEDLINE]

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