A comparison of genetic fingerprints of Escherichia coli isolated from fields after manure application. (S03-sinnhuber163859-Poster)

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Abstract:

Escherichia coli is often used as an indicator species of fecal contamination in water systems. Various techniques are being tested to determine sources of fecal contamination. A technique currently being proposed is genetic fingerprinting using rep-PCR primers. In order for this to be a reliable method, it is important to establish that the genetic fingerprints of isolates remain the same after entry into the environment. This study tests two rep-PCR primers, BOX A1-R and REP, using E. coli isolated from swine manure being applied to fields and those subsequently isolated over time from field leachate. The field plots used in this experiment had one of three treatments: spring applied manure, fall applied manure or no manure application. Each plot is equipped with large lysimeters and is fully automated for year-round collection of leachate samples for laboratory analysis. The variation in fingerprints observed among the manure isolates was similar to the variability observed in the leachate isolates regardless of the field treatment. These preliminary results indicate that fingerprint patterns from this source did not change substantially after entry into the environment.

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