Survival of Salmonella typhimurium in four soil microcosms as affected by soil type and incubation temperature. (S11-balaa122156-Poster)

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Abstract:

Survival of Salmonella typhimurium was determined in sterile and non-sterile microcosms in four soils (Brooksville, Leeper, Marietta, and Ruston) held at 10, 15, 25 and 35oC. Exponential linear destruction was observed for S. typhimurium in non-sterile soil stored at all temperatures. Decimal reduction times ranged from 4 to 25 days. The effects of incubation time and temperature showed most rapid destruction occurring at 35oC. Decimal reductions varied across soil types. Least destruction occurred in Brooksville soil at 10oC. With the exception of Marietta soil, no noticeable reductions were observed in sterile soil over 16 days of incubation. Quantitative data on fate and prevalence of potential pathogens in environmental samples is needed to develop risk indices and evaluate effectiveness and costs of potential intervention strategies. Sterile soil microcosms do not faithfully convey antagonistic effects soils have on the survival of S. typhimurium.

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