

The survival of FIOs in soil, following dairy cattle slurry application to land by surface broadcasting and shallow injection

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The amended Bathing Water Directive (2006/7/EC) of February 2006 saw the introduction of more stringent microbial parameters for both inland and coastal waters. Two microbial parameters are now required to be examined; intestinal enterococci and *Escherichia coli* (FIOs). Approximately ninety million tonnes of livestock manures are recycled to agricultural land in the UK annually, which is a potential source of FIO export to surface waters.

The survival of FIOs within dairy cattle slurry, applied by broadcast and shallow injection was investigated at the plot scale. Soil core samples (2 cm depth) were taken and analysed for FIOs from fifteen 4 m² plots; 5 broadcast, 5 shallow injection, to which fresh slurry was applied at the rate of 45 m³ per hectare and 5 controls (no slurry addition) during the summer.

The application method affected the survival rate of FIOs. *E.coli*, 84 days intestinal enterococci, 111 days when applied via shallow injection as compared to 50 days and 63 days, respectively following broadcast application. Thus, FIOs can survive for extended periods following slurry application by shallow injection.