

Title Safe use of poultry litter in vegetable production
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Abstract

Poultry litter is used in vegetable production as a nutrient supplement and to add organic matter to the soil. Despite much debate there is very little scientific data available with respect to bacteriological food safety issues associated with the use of poultry litter. This work was developed to address this by assessing the risk of current practices and develop risk minimization strategies. Field studies (conducted in Victoria, Australia) of bacterial numbers in poultry litter applied to soil showed a decrease over 12 weeks. However, maintenance and even increases in numbers occurred during the first fortnight. Initial *Escherichia coli* counts of around 3.1×10^3 decreased 99% by 8 weeks with bacteria persisting for at least 12 weeks. In addition, *Salmonella* was detected at 12 weeks. This work also investigated existing practices for use of poultry litter by vegetable growers and contamination of produce with bacteria. A survey of seven farms showed low numbers of *E. coli* and no pathogenic *Salmonella*, *Campylobacter* or *Listeria* at harvest time. However, a non-pathogenic *Salmonella* sp. was detected from one crop. These results suggest that current practices for the use of poultry litter present a low risk of contamination of produce with pathogenic bacteria. However, application of poultry litter several weeks prior to planting and the use of composted litter may further reduce this risk.