USDA-CSREES 2007 National Water Quality Conference

Survival kinetics of Cryptosporidium oocysts in swine facility wastes of the Southern Piedmont and Coast

Cryptosporidium infections remain a major concern relative to the nation’s drinking water, hence its citation in the 2006 Priorities for Research "understand the source, fate and transports of pathogens ...; with special emphasis on …Cryptosporidium….”. The role of pigs as a source of oocysts entering watershed has been relatively neglected compared cattle as sources. This work will characterize the magnitude of the problem relative to pigs by determining the types, concentrations, and viability of oocysts in pig waste. Because pig waste is routinely handled by storage in anaerobic lagoons, it may be the problem is markedly reduced compared to what is seen with cattle where land applied manure is usually fresh or simply stored in piles for some period of time. Based on our examinations of the survival of oocysts in anaerobic digesters, there are strong indications that the majority of oocysts will be inactivated by anaerobic waste lagoons. The use of primary and secondary staged lagoon also is also expected to have significant impacts on oocyst viability. We hope to also determine if the lagoon process will reduce the ability of the oocysts to survive after land applied. This project supports goals to protect the nation\\\'s natural resource base by providing knowledge to improve the management of water resources to enhance the environment. It also is directed at reducing disease associated with animal water products. Lastly, it supports research and extension initiatives on watershed protection and management.

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