

Using a land application approach for managing dairy cattle waste products in China

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The Chinese dairy industry has rapidly expanded over the past ten years as a result of an increased consumer demand for safe, high quality and traceable milk. Fonterra has responded to this market opportunity by increasing its farming presence as part of an integrated strategy in China. A challenge associated with large-scale intensive animal production in China (indeed from any animal farming enterprise) is the collection, treatment and/or disposal of a large amount of excreta waste products. In response, a bi-lateral research programme was developed between China and New Zealand under the governance of the New Zealand Ministry for the Environment and the Chinese Ministry for Environmental Protection. This research, using a field plot trial and lysimeters, assessed a number of agronomic and environmental performance measures associated with four different waste products when applied to land at a Fonterra farm land in Yutian, Hebei Province of China. In summary, the results demonstrate that the application of manure and liquid effluents to land, whether composted or raw, resulted in similar (for effluent) or less (for manure) overall nitrogen loss compared to use of chemical fertilisers (at the equivalent N loading rates). Crop yield response to either manure or effluent application was generally similar to that achieved using only chemical fertilisers. These results demonstrate that land application of manures and effluents poses no additional risk to the environment compared to existing farming practices and provides similar agronomic benefits to conventional fertilisers.