

Environmental Footprint of the Dairy Sheep Industry

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One of the greatest challenges facing food producers today is reducing the environmental impacts of farming activities whilst staying financially viable in an increasingly competitive marketplace. Increasing pressure is being placed on the New Zealand (NZ) dairy cow industry to meet with compliance and environmental legislation. With this increasing pressure, alternative industries, such as dairy sheep are being explored that may have a lower environmental impact.

A research program around 'Boosting exports of the emerging NZ dairy sheep industry' is currently underway, and one of the four key objectives is understanding the environmental footprint of the dairy sheep industry. Two key work-streams of this objective are 1) Characterising dairy sheep effluent (this work is completed) and 2) Understanding nitrogen (N) losses from a dairy sheep system and providing baseline data that may be incorporated into decision support tools (underway).

Milking sheep produce an effluent stream from the milking parlour that is either applied directly from the sump to land via spray irrigators, or is stored in an effluent pond for later application to land. A monitoring programme was undertaken with effluent samples collected over two lactation seasons (2014/15 & 2015/16) from three case study dairy sheep farms. The mean physical and chemical attributes of these effluent samples were: 0.54% DM, 0.220 kg N/m³, 0.032 kg P/m³, 0.150 kg K/m³ and 0.022 kg S/m³. The mean nutrient concentrations of dairy sheep effluent are lower than values reported for dairy goat and dairy cow effluents.

Limited information is currently available around N losses from a dairy sheep system. A key information gap is the limited understanding of sheep urine patch dynamics. An experiment has been established to understand if the recovery of sheep urine is more efficient due to the edge effect and if area is a bigger driver than concentration.