



# New global greenhouse gas database available for interrogation

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Shallow injection of slurry reduces ammonia emissions. Photo courtesy of AgResearch NZ.

*Shallow injection of slurry reduces ammonia emissions. Photo courtesy of AgResearch NZ.*

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Livestock manure management is an important source of the greenhouse gases nitrous oxide ( $\text{N}_2\text{O}$ ), ammonia ( $\text{NH}_3$ ), and methane ( $\text{CH}_4$ ). While previous studies have evaluated manure-related emissions and associated key variables at regional, national, or continental scales, there have been few studies focusing on the drivers of these emissions using a global dataset.

A new article in the *Journal of Environmental Quality* details a global database on  $\text{N}_2\text{O}$  and  $\text{NH}_3$  emission factors from land-applied manure and excreta deposited by grazing livestock. This “field” database is produced as part of an international Global Research Alliance project called DATAMAN and is the first of three manure management databases to be launched; the others (“housing” and “storage”) are to be launched

later this year. The “field” database contains more than 5,000 observations compiled from 184 studies and includes emission factors, manure characteristics, soil properties, and climatic conditions.

Open access to the database (at [www.dataman.co.nz](http://www.dataman.co.nz)) allows researchers and inventory compilers to download and interrogate the data to determine key variables influencing emissions, evaluate the effectiveness of mitigation strategies, and ultimately produce refined emission factor values for future national greenhouse gas inventories and NH<sub>3</sub> emission reporting.

### **Dig Deeper**

Beltran, I., van der Weerden, T.J., Alfaro, M.A., Amon, B., de Klein, C.A.M., Grace, P., ... & Velthof, G.L. (2021). DATAMAN: A global database of nitrous oxide and ammonia emission factors for excreta deposited by livestock and land-applied manure.

*Journal of Environmental Quality*. <https://doi.org/10.1002/jeq2.20186>

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