

## PhD Position Soil & Environmental Science:

**Project title:** Can nitrous oxide emissions from dairy pastures be reduced with increased pasture diversity and optimised grazing management?

**Supervisors:** Prof Tim Clough, Lincoln University, New Zealand and Dr Johannes Laubach, Manaaki Whenua – Landcare Research.

### Background and Objectives:

In New Zealand (NZ), animal agriculture (dairy, beef and sheep) is an economically important industry, with a sizable contribution to the country's greenhouse gas (GHG) emissions, both as methane from the animals and as nitrous oxide from the pasture soils. Government and progressive industry organisations are keen to develop management practices that help reduce GHG emissions. NZ dairy farms predominantly use rotational grazing. The bulk of nitrous oxide emissions occurs from excreta deposited by the animals. Management practices with potential to alter the nitrous oxide emissions include the use of highly diverse mixtures of pasture species and variations to grazing frequency and density. The PhD position offered here will be an opportunity to investigate the effects of such practices, using field and laboratory experiments on working dairy farms and supporting laboratory experiments. The student is expected not only to quantify effects and determine statistical significance, but also to develop and explore hypotheses on the underlying mechanisms, based on properties of soil, pasture and excreta and interactions between these.

**Requirements:** Applicants should have a primary degree and/or a MSc in an appropriate discipline. A knowledge of soil science, carbon and nitrogen dynamics and the use of stable isotopes will be advantageous.

**Funding and resources:** The position is funded by Manaaki Whenua – Landcare Research and covers a postgraduate PhD stipend of NZD \$40 kp.a. and tuition fees for three years. It will be based at Lincoln University, with supervisors from both institutions closely collaborating. We provide state-of-the-art gas analysers and lab equipment. Lincoln is situated in the South Island of NZ, within the greater Christchurch area with bus connection to the city.

**Starting date:** The project will start as soon as possible and run for three years.

### How to apply:

To express your interest in this scholarship and PhD research opportunity, please prepare the following items:

**A brief CV** including qualifications, academic achievements, list of publications, work history, and references. A copy of your **academic transcript(s)**.

Send applications, including statements from two referees to:

Amal Torky

Departmental Secretary, Department of Soil & Physical Sciences, Faculty of Agriculture & Life Sciences, PO Box 85084, Lincoln University, Lincoln 7647, New Zealand.

**email [amal.torky@lincoln.ac.nz](mailto:amal.torky@lincoln.ac.nz)**