

## PHD RESEARCH PROJECT OPPORTUNITY

An exciting PhD research opportunity is available within FutureDairy and the Dairy Research Foundation at the University of Sydney!

**Title:** Evaluation of complementary forages for the Australian dairy industry

**Primary Supervisor:** Associate Professor Sergio C. (Yani) Garcia

**Associate Supervisor(s):** Dr Md Rafiq Islam; Dr Ajantha Horadagoda

**Research Location:** Dairy Research Foundation- MC Franklin Lab, Faculty of Veterinary Science, Camden, The University of Sydney.

### Project Summary:

This PhD research opportunity will use small-plot field studies to test aspects of forage production and quality, cows' preference and effects on soil characteristics and health of those forage crops with the greatest potential to increase productivity from home-grown feed in Australian dairy farms.

### Project Synopsis:

FutureDairy, a national, industry driven program of work, is looking at increasing milk production from home grown feed. Despite the current international crisis, the long term trends are for grain availability to be limited and the price of grain to be higher due to increased use for human consumption and ethanol production. This would result in higher costs of milk production for farms that rely more heavily on grain and concentrates as feed for dairy cows.

An alternative is to produce more feed on farm. FutureDairy has achieved over 40 t DM/ha/year by means of a Complementary Forage Rotation involving 3 crops/year (CFR, Garcia *et al.* 2008<sup>1</sup>). We have later combined CFRs with typical pastures into a so called Complementary Forage System (CFS). This system is demonstrating huge potential to increase total milk production up to about 30,000L/ha from home-grown feed.

However, more work needs to be done to evaluate different forage alternatives that make better use of limited resources such as water and nutrients.

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<sup>1</sup> Grass and Forage Science Volume 63, Issue 3, Date: September 2008, Pages: 284-300

Thus, the focus of this agronomic-based PhD project will be on the evaluation of more suitable forages for dairy farms including aspects of water use efficiency, nutrient response, effects on soil and the environment as well as animal preference.

**Keywords:** Forage production and utilisation, dairy system; dairy cow; pasture; forage crop; complementary forage rotation

**Additional Information/resources:**

- The scholarship comprises an annual stipend of \$30,000.
- This project provides a unique opportunity to work in collaboration with other Feedbase-related projects in Victoria, Tasmania and Queensland.
- We have a field research set up which includes up to 200 small plots fitted with a totally automated sprinkler-irrigation system.
- In addition we have plenty of irrigated land to conduct grazing studies including evaluations of cows' preference and animal behaviour.
- Currently there are 3 PhD students in related projects (forage evaluation; CFS and rumen effect of forage diets)
- FutureDairy also offers PhD scholarships in the Precision Farming and Automatic Milking areas.
- All our scholarships target Australian and New Zealand citizens or Australian permanent residents who hold either an Honours or an MSc degree in Agriculture or related area. International students are also eligible to apply provided they have additional financial support to cover international tuition fees (~\$27,000/year).

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**Interested?**

- Please send CV and a statement relating your skills/interests specific to this project to:

**Associate Professor Yani Garcia**

[sgarcia@usyd.edu.au](mailto:sgarcia@usyd.edu.au)

- Overseas applicants, please clearly indicate availability of funds and/or institutional support to cover international tuition fees at The University of Sydney.
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