

The Scientists



Jessica Coad

What interested you in science as a child?

As a kid I cherished being outdoors. I would spend hours collecting butterflies, lady beetles, trying to catch yabbies, mice and birds, and imitating Sir David Attenborough when I came across a creature.

At school I was always excited about doing an assignment. I would come home and spend hours working on them. I have always had the desire to have little projects on the go, thinking, organising and starting something new. This coupled with my rural up-bring; it was only natural that I studied Agricultural Science.

What did you study at university?

Graduated with a Bachelor of Agricultural Science from the University of Tasmania in Hobart in 2004, and I have just completed honours which I was working on part time whilst a full time staff member at the Tasmanian Institute of Agricultural Research (TIAR).

What is your current research/career?

Currently working within TIAR based at the Cuthbertson Agricultural Research Laboratories at the cradle coast campus of the University of Tasmania. I am

investigating heavy metal uptake and accumulation in plants after biosolid application. This is important since biosolids are by-products from the treatment of urban wastewaters and contain essential nutrients and organic matter that can promote plant production. However, biosolids also contain heavy metal contaminants such as cadmium (Cd) and zinc which can accumulate in soil after repeated application. Accumulation can also occur in the plant and reduce plant growth through phytotoxicity. However, accumulation of heavy metals in plants above the maximum permitted concentration set by the National Food Authority can occur before phytotoxicity. Unacceptable concentrations of Cd for example, is a food safety risk since it is readily accumulated in the edible portion of crop plants. Accumulation of heavy metals in the soils can be considered permanent, except for quantities taken up via harvested plant tissue.

I am also participating in a national project accounting for nutrients on Australian dairy farms. My involvement with this project started with my previous two year role within the dairy group at TIAR. I soil tested 1444 paddocks, and produced nutrient budgets for 28 dairy farms within one catchment in the far north-west of the state. Such an intensive study of this kind had never before been conducted in Australia, or mostly likely the world. I also conducted a 'white peg in the ground' research project working to define soil P fertiliser requirements to satisfy sorption reactions in dairy pasture soils in south-eastern Australia.

What are your future aspirations?

This is a question I get asked quite a lot and I find it the most difficult to answer. If you had asked me this question before I went to Uni it would have been to graduate, and get a 'good' job. Currently it is to work in a field that I find interesting, stimulating and rewarding. The future may entail further study, such as a PhD, however, no matter what I do, I know I will achieve job satisfaction through working in such a robust industry with endless possibilities.

What do you love about science?

Overall it is finding the answers to questions...well not always, but at least working towards them. Other factors which play a large part include;

- the choice to work in a field which interests me the most.
- the ability to work in a vast array of environments.
- the fact that attention to detail is imperative to be able to conduct good quality science.
- the freedom to organise and choose where I am on a daily basis, whether I am out in the field on a beautiful sunny day or in the office on a cold winters day.
- the responsibility for not only myself but also casual employees and other staff who assist me in collecting data.

So far in my short career I have been able to converse one on one with farmers in the paddock, industry representatives at meetings and field days, reporters from various media, regulatory personnel at meetings, technical staff from laboratories across Australia, and fellow researchers from across the world at conferences and workshops. All of which share the same interest as me after asking the same question, WHY?