



national science week 2011

Adam Pirie, UTAS School of Pharmacy *Finding health benefits in native plants.*



Why? What if? How come? These seem to be the questions I've asked for as long as I can remember. Growing up I was always interested in being outdoors and spent many hours either helping out on my parents farm or scrambling over rocks and exploring along the creek (always assisted by one or more of the family dogs). I can remember catching tadpoles to watch them turn into frogs as well as keeping pet yabbies, and turtles at various times during my childhood and *always* wanting to know how things happened the way they did.

Why did you choose to go to University and what did you study?

As I grew older I became more aware of the trade-off that occurs between environmental health and viable agricultural production. A lot of environmental damage is due to the reliance of agriculture on annual crops which are unable to protect the soil from erosion or salinity due to their short (annual) life span. Unfortunately, there is a lack of viable perennial plant options for landholders to grow (perennial plants last for two

or more growing seasons). Seeing this led me to decide to complete a Bachelor of Land and Water Science degree at the University of Sydney when I finished school so that I could work to improve the sustainability of agricultural production and help farmers to implement these ideas. For several years I worked in research and then with landholders on projects to improve their farm environment and in this time I saw that one of the major limitations to completing more of this work is the short term cost these projects have on the farm income.

I became interested in the idea of identifying perennial Australian plants that could be grown as a crop by farmers whilst at the same time providing improved environmental outcomes (better biodiversity, reduced erosion and salinity), and a source of income. As part of this I made contact with the School of Pharmacy at the University of Tasmania and decided to enrol in a PhD looking at the pharmaceutical potential of native Australian plant species.

The project I am working on looks at whether extracts of the common native plant, "Pigface" contain compounds that have human health benefits which could then possibly be developed into a pharmaceutical product. To do this my research focuses on answering two major questions:

a) can the plant be influenced (ie by changing its environmental growth conditions), to produce more of the compounds we are interested in, and



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b) what health benefits do these compounds have?

Early results from my work have identified some of the environmental factors affecting compound production and also indicate that some of the extracts have cardiovascular protective properties. My work is now looking at confirming these protective properties, identifying how these protective effects work, as well identifying other factors affecting compound production by the plant.



What are your future aspirations?

I would like to continue investigating and identifying perennial native plants that have pharmaceutically active effects so that (hopefully) one day these plants can be grown by farmers and fix degraded areas of land where they are growing while at the same time being commercially profitable.

What you love about science?

The three things that I love most about science are:

1. The fact that it allows me to get answers to the questions I've been asking my whole life such as Why? What if? How come?
2. Not knowing what the answers to your questions will be or where your research will end up.
3. That I get to work on things that could make people's lives better.

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