



# Getting a taste for saltbush

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ABOVE: Hayley Norman and host farmer Tony York, inspect the old man saltbush site on his property in Tammin, WA. (Photo: FFI CRC)

Collaborative research into saltbush has seen FFI CRC researcher Dr Hayley Norman (CSIRO Livestock Industries) focus her team's efforts on the nutritional value of saltbush for grazing livestock.

Dr Norman and her CSIRO team looked at organic matter digestibility, crude protein and the mineral profile of a subset of 500 plants representing all of the families from the Monarto site, South Australia (see story on page 4).

The team calibrated Near-Infrared Spectrophotometry (NIR) to laboratory methods, then calibrated the laboratory methods to the *in vivo* (animal) data, using

penned sheep fed cut saltbush and other native shrubs.

The results show that some saltbush families contain higher levels of nutrients than others. Preliminary results indicate more than 16 percentage units difference between the most and the least digestible shrubs. At this stage, it is not known whether or not the families with the higher nutrient levels are those that the sheep prefer to graze.

"Other studies have shown that sheep will select a diet high in nutritional value and low in anti-nutritional compounds," Dr Norman said.

Dr Norman said that researchers would analyse the data to determine if there is any correlation between the sheep's relative preference and nutritional quality. Establishing any linkage will be of significant benefit in selecting cultivars for further research and breeding.

"This could be the first time animal preferences have been used this early in the plant-selection process," Dr Norman said.

Based on the preliminary data, the families being tested will be narrowed down with further analyses carried out across all sites.

The CSIRO team is also looking at extra nutritional characteristics of saltbush.

"In order to persist in arid and saline environments, saltbushes accumulate minerals and produce a range of secondary

compounds such as vitamin E and betaine." Dr Norman said. "These extra nutritional characteristics could lead to healthier animals and a better quality product." (See PhD student story on the following page).

Vitamin E is an antioxidant, which young sheep are often deficient in during autumn. In extreme cases, this deficiency causes animal deaths; in other cases it produces meat of lower quality that browns quickly after processing. An increase in vitamin E content in the animals initially gives a healthier animal, and ultimately produces meat with a longer shelf-life.

Dr Norman said that by broadening the nutritional availability of pastures, animals are better able to balance their own diets, leading to healthier and more productive livestock.

By looking at the extra nutritional characteristics of saltbush, the project aims to increase the profitability of saltbush pasture systems.

"We are aiming to develop systems that are environmentally positive and profitable. If it is not profitable, it won't happen on a large enough scale to make a difference," Dr Norman said. ↓

## More information

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## key points

- Some saltbush families have more value as a source of livestock fodder than others
- Researchers are investigating the possibility that sheep preferentially graze the more nutritious plants over those with lesser nutritive value
- Additional nutritive qualities of saltbush could lead to healthier grazing livestock and meat with a longer shelf-life.