Research expands pasture species' range

It's not all about new varieties and species though — researchers in the *Future Livestock Production* program have been investigating the options with existing varieties.

"Our team has discovered the unrealised potential of sub-tropical perennial grasses in northern New South Wales. Grasses that can greatly extend the perenniality of pastures in regions receiving a high proportion of summer rain," program leader Dr Joe Jacobs said.

The research optimised the agronomy of pasture establishment in the region and produced benchmark performance standards for production, quality, water use and water-use efficiency. All the information was combined to demonstrate the economic implications of the new techniques.

The potential of chicory as a short-term, high-quality forage break crop in the cereal belt and medium-rainfall permanent pasture zone of southern Australia has been further explored, extending its use well beyond its traditional use in the high-rainfall zone.

"We have investigated the role of winter-active Mediterranean ecotypes of cocksfoots, fescues and phalaris in the medium-rainfall wheatbelt and the need to select for increased levels of summer dormancy," Dr Jacobs said.

Researchers have also been busy identifying the value of *Lotononis bainesii* as the perennial subtropical legume most capable of persisting in medium- to low-rainfall cool temperate/mediterranean regions that receive some summer rainfall.

Lucerne remains a key focus for researchers in the livestock production team and the hardy perennial continues to prove its superior drought tolerance and persistence across a diversity of sites, justifying further efforts to extend the limits of adaptation of this valuable species with a focus on increasing tolerance to grazing, waterlogging and acid soils.

"We also have recognised the excellent persistence of the Australian native grass *Austrodanthonia caespitosa*, which is enabling the subsequent development and release of the first cultivar of this species," Dr Jacobs said. "*Austrodanthonia caespitosa* also has a low-to negligible environmental weed risk, compared to cocksfoot and phalaris."

For low-rainfall areas legume germplasm has been consolidated with Lancelot trefoil (*Bituminaria bituminosa* var. *albomarginata*) showing the greatest potential.

More information

Dr Joe Jacobs, DPI Victoria
T: 0427 947 692
E: joe.jacobs@dpi.vic.gov.au

Wireless sensing still on the radar

Developmental research continues to develop wireless sensing technologies for vegetation studies.

This offers benefits of improved experimental design via flexible equipment deployment, improved monitoring access in logistically challenging environments (such as tall tree canopies) and increased density of observations for better validation of models and hypotheses.

More information

Steve Burgess
T: (08) 6488 2073
E: ssb@cyllene.uwa.edu.au

Postgraduate training

FFI CRC has seen the successful recruitment of 18 new postgraduate students for this first year of the CRC.

More information

Daryll Richardson
M: 0409 312 574
E: drichardson@agaveeducation.com.au

Perennials make a bold statement

After more than seven years of research and almost one year in preparation the FFI CRC's *Prospects for profitable perennials in mixed farming systems* publication will soon be distributed to farmers, extension officers and other industry stakeholders.

Put together by UWA researcher Dr Sarita Bennett, the publication comes as changing conditions threaten the sustainability of farming operations across southern Australia.

"An increasingly variable climate and recent drought years have led to the realisation that current farming practices in the low- to medium-rainfall farming areas of Australia need to be altered in order for farmers to remain viable," Dr Bennett said.

"Perennial plants with deep roots can access water in the soil profile, and as a result provide out-of-season feed, are regarded as one way mixed farmers can maintain their profitability."

The *Prospects for profitable perennials in mixed farming systems* publication is based on six years of research by the former CRC for Plant-based Management of Dryland Salinity and provides perennial plant options for farming regions across southern Australia.

"It takes a region-by-region approach based on temperature, rainfall and soil type," Dr Bennett said.

"During the past lucerne has been the most popular perennial but I have also looked at other perennial legumes, grasses and herbs such as chicory."

Dr Bennett said the publication was a handy reference to perennial plants for both farmers and extension officers.

"They can look at the information that is relevant to their area, decide what perennial plants are most suitable for their needs and also find out more about different farming systems which include perennial plants."

Farmer case studies support the scientific data and demonstrate, in a practical way, how perennial plants are being successfully and profitability incorporated into Australian mixed farming operations.

The publication also includes a cost-benefit analysis comparing perennial plants with annual forage and out-of-season feed and a weed risk analysis.

The *Prospects for profitable perennials in mixed farming systems* publication is set to be released early during 2009.

More information

Dr Sarita Bennett, UWA
T: (08) 6488 4841
E: sarita@cyllene.uwa.edu.au