

Foreword

Introducing perennial pasture species and cultivars to Australian dryland farming systems is by no means a new concept. However, the papers in this special issue of the *Australian Journal of Experimental Agriculture* document a substantial and sustained research program that seeks to substantially expand the scale of their use. The focus is expansive and includes profitable and adaptive farming systems for southern and temperate Australia, extending to lower rainfall environments and a wide range of farming system applications and enterprises.

Success with perennial and salt-tolerant plants will result from their adoption into grazing and cropping systems that are not only profitable, but also have the ability to exploit available water in the face of the multiple threats of drought, salinity, waterlogging and soil acidity. There can be other landscape benefits too: enhanced biodiversity, soil cover and protection of water resources. However, the introduction of new perennials plants also carries a duty of care, in particular the prevention of new weeds.

The research comprehensively assessed in this issue was conducted by the Cooperative Research Centre for Plant-based Management of Dryland Salinity (CRC Salinity), a joint venture between the major primary industry research and development organisations in Australia. CRC Salinity was formed in 2001 in response to the threat of dryland salinity in Australia, which was highlighted in 2000 with the release of land and water resources and salinity audits in the run-up to the Australian Government initiating the National Action Plan on Salinity and Water Quality.

However, it is now clear that actions to reverse salinity have had limited impact: for most farmers there are not yet profitable options for salinity prevention and, in many situations, the scale of the salinity threat is not as great as previously predicted.

Salinity strategies were developed from the idea that the reintroduction of perennial plants to mimic the highly efficient water-use of the original native vegetation would 'turn dryland salinity around'. There have been notable successes in Australia in stabilising or reducing the area of salt-affected land on individual farms and in improving stream salinity in some catchments. However, these are the exceptions and the circumstances are regionally specific.

On the other hand, the capacity of perennial plants to be profitable and to effectively use available water will benefit dryland farming systems in many ways. The research published in this issue identifies a large suite of species and cultivars with the potential to be productive as well as adapted to a wide range of Australian conditions. Farmers will now have many more options available; for example, higher performance livestock production and more resilient cropping systems based on perennials, replacement and extension of existing cultivars with better performing ones to overcome seasonal and soil constraints, and the ability to profitably farm salt-affected soils for the first time.

This special issue of the *Australian Journal of Experimental Agriculture* provides the reader with a contemporary review of research into perennial pasture and forage plants for Australian dryland agriculture and an outlook for future farming systems that will be more profitable, sustainable and adaptable.

Kevin Goss
CEO Future Farm Industries CRC
(formerly CRC for Plant-based Management of Dryland Salinity).



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