

Australian Grassland Association – Soil Constraints on Pasture Productivity 2019

Managing the interactions between climate, soil, pasture and grazing animals remains a key challenge for pasture-based livestock production systems across the world. The Australian Grassland Association (AGA) convened a research symposium on ‘Soil Constraints on Pasture Productivity’ to address these important topics. The symposium was held on 12–14 February 2019 at Launceston, Tasmania. The symposium covered themes of soil fertility, soil biology and managing soil constraints, and included a field trip to two properties in the Midlands region of Tasmania.

This Special Issue of Crop and Pasture Science presents the key scientific papers from the symposium. Soil fertility has long been an important limitation for pasture production in Australia, and Gourley *et al.* (2019) presents new information on pasture yield responses to addition of phosphorus, potassium and sulfur for regions around Australia. There is also an increasing emphasis on the development of more phosphorus efficient pastures which is highlighted by Sandral *et al.* (2019) and McCaskill *et al.* (2019), while the phosphorus requirements of native pastures in south-eastern Australia was reviewed by Mitchell *et al.* (2019). Nitrogen fertiliser application has become increasingly important in the Australia dairy industry and the balance between production and potential for nitrogen losses was examined by Rawnsley *et al.* (2019).

Other constraints on pasture productivity were also considered at the symposium. These included the micronutrients (Brennan *et al.* 2019), soil acidity and legume nodulation (Hackney *et al.* 2019) and the importance of soil moisture for legume species (Hayes *et al.* 2019) and perennial grasses (Rogers *et al.* 2019). In animal production systems, pastures must supply the mineral nutrition of livestock. Masters *et al.* (2019) provided an important review of this topic finding that mineral supply from pastures is limiting at some periods during the year, and highlighting the opportunities to use combinations of species to better meet the animal requirements.

This symposium was the fourth in a series of AGA research symposia following on from the ‘Australian Legume Symposium’ (2012), ‘Perennial Grasses in Pasture Production Systems’ (2014) and ‘Livestock Productivity from Pastures’ (2017). The AGA was established to facilitate the ongoing improvement and development of the pasture industry. We do this through providing a forum which brings together a wide range of industry stakeholders in order to:

- Facilitate the interaction and exchange of ideas and provide an opportunity for research to be presented and published;
- Provide an opportunity for all interested stakeholders to review and contribute to the advancement of pasture-based industries through science; and
- Consider and discuss the state of the pasture industry and the research needed in order for it to meet the challenges of today and be prepared for the future.

The AGA symposium was put together by a dedicated committee of Stuart Kemp, Dr Keith Pembleton, Carol Harris, Dr Kevin Reed, Dr Beth Penrose, Dr Rowan Smith, Dr Mark Norton and Dr Brendan Cullen. The committee would like to thank the symposium sponsors Dairy Australia, Meat & Livestock Australia and Incitec Pivot.

I trust you will enjoy this special edition of Crop and Pasture Science and find it informative. I look forward to seeing you at the next Australian Grassland Association event.

Dr Brendan Cullen

Editor, Australian Grassland Association Inc.

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