Virtual fencing as a future tool for Mallee farmers

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Funded By: Department of Agriculture and Water Resources

Project Title: Targeted sheep grazing technology

Key Messages
• The first on-farm field trial applying virtual fencing to sheep showed that grazing can be successfully managed using virtual fencing methods, with the sheep showing promising learning ability.
• Based just on the benefits from avoiding the need to remove livestock from an entire paddock when just one soil or zone incurs excessive groundcover loss and erosion risk, spatial grazing in a typical Mallee crop-livestock system has the potential to increase the relative profitability of livestock and increase Mallee farm profit by 15% (excluding the cost of the technology). Other potential benefits include improved general improvements in feed utilisation, labour saving, targeted grazing for weed management purposes, and managing pasture establishment.
• The results offer encouragement for the ongoing pursuit of cost-effective virtual fencing technology for sheep.
• Due to wool and animal size differences with sheep, the use of collars may not be a long-term solution for commercial devices so technical development of other platforms such as ear tags is likely to be required.

Why was the trial/project undertaken?
Virtual fencing technology that allows livestock to be managed using GPS-based technology offers the potential for major grazing productivity, labour and NRM benefits. A virtual fencing system based on CSIRO technology using collars for cattle is expected to become commercially available for use with cattle in 2018 (www.agersens.com). There has been major interest from mixed farmers regarding the potential use of virtual fencing although very little work had been done with sheep.

How was the trial/project undertaken?
Over the past 2 years we have been conducting field trials in collaboration with MSF to test the potential to manage sheep with virtual fencing methods. Trials were initially conducted at the CSIRO research station near Armidale NSW to test the ability of individual sheep to be trained to respond to an audio cue on test collars. The first on-farm trial was conducted near Gol Gol NSW in 2017 to test whether a small number of sheep can be excluded from an erodible area of a small paddock over a 2 day period. In 2018 a trial at Waikerie is being conducted to test how effectively sheep grazing can be managed when not all sheep are wearing a virtual fencing device. The potential economic benefits of spatial grazing on a mallee mixed farm has also been evaluated using the MIDAS whole-farm model.

Acknowledgements
The contributions of Bill Barnfield, Allen Buckley, Dave Henry and the Chiswick and Moodie Agronomy teams are gratefully acknowledged.