

PASTURES FROM SPACE – ECONOMIC VALUE OF THE TECHNOLOGY TO PRODUCERS

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The vision of the Pastures from Space consortium is to provide cost-effective, reliable, timely and accurate satellite-based pasture growth rate (PGR) and feed on offer (FOO) information that will enable producers to increase their productivity and profitability. A majority of producers surveyed felt the information obtained from remote sensing contributed to an increase in the profitability of their wool enterprise and farming business (Gherardi and Oldham 2003). However, when asked to quantify the increase in profitability, the producers were not able to, highlighting the need to undertake detailed economic analyses covering a range of applications. In 2003, 8 producer case studies were undertaken to quantify the benefits of remote sensed near real time and 7-day forecast PGR information, delivered weekly. Direct applications for which the technology was used included increases in stocking rate, management of remote properties, management of grazing strategies (e.g. strip grazing, rotational grazing), reseeding of pastures, application of fertilisers and conservation of feed as silage. This paper reports preliminary results from 2 of the 8 case studies undertaken. The case studies incorporate information gathered from interviews with farmers and the collection of financial and production figures that were obtained from computer software programs such as Paddock Action Manager (PAMQA+) and Agrimaster.

Case Study One: Strip grazing of ewes

Roger House manages a 1,180 ha farm at Kojonup, 270 km south west of Perth. Approximately 25% of the arable area is planted to crops, and he runs 11,000 dse at a winter grazed stocking rate of 13 dse/ha, with an average annual rainfall of 500-550 mm. Roger used satellite-based estimates of PGR to strip graze reproducing ewes, which would normally have been set-stocked.

Economic analysis showed that strip grazing was more profitable than set stocking, with a gross margin of \$868/ha compared with \$486/ha. Strip grazing and feed budgeting significantly increased the stocking rate capabilities of the paddock compared with set stocking (24.3 v. 18.0 dse/ha). Sixty one percent of the pasture was utilised when strip grazed compared with 18% when it was set stocked. The PGR technology provided Roger with the information and confidence to make the feed budgeting decisions required for strip grazing, increasing efficiency of pasture use and profitability.

Case Study Two: Making decisions about the application of fertilisers

Ben Wilson has a 1,100 ha farm at Broomehill, approximately 295 km south west of Perth. About 30% of the arable area is cropped, and he runs 7,685 dse at a winter grazed stocking rate of 10 dse/ha, with an average rainfall of 500 mm. Ben used remote sensed estimates of PGR to calculate and compare the total DM production on individual paddocks on his farm. The technology allowed Ben to identify poor performing paddocks and to investigate options for amelioration. Following discussions with his fertiliser company, it was decided to trial the application of a N.P.K compound fertiliser at 80 kg/ha. However, on further investigation, it was found that the lack of nutrients was not the problem, but rather pasture composition. At the break of the season in 2004, Ben will re-seed the pasture in the paddocks concerned with ryegrass, ensuring early and vigorous DM production.

The financial impact of this decision was a benefit of \$27/ha. By not applying the fertiliser, the gross margin was \$371/ha as opposed to \$344/ha if he had applied the fertiliser. This analysis does not yet take into consideration the financial impact of increased pasture production in the future. If Ben had not had the PGR information, he would not have asked the questions.

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