Farmer adoption; ten years of productive pasture systems in southern Australia

G.R. Saul[1], H.L. Quinn[1] and J.T Trompf[2]
[1]*Department of Primary Industry, PB 105, Hamilton, Victoria 3300, Australia, Email: geoff.saul@dpi.vic.gov.au,* [2]*J.T. Agri-source, 2A Bradley Drive Mill Park, Victoria 3082, Australia*

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Introduction Southern Australian sheep and beef farmers have been slow to adopt technology related to grazing management and pasture utilisation despite clear evidence of a strong link between utilisation (stock per ha) and profitability. Between 1971-95, the average stocking rate on farms was 10-12 dry sheep equivalent per hectare (dse/ha) (Anon 2004). Results from the Hamilton Long-term Phosphate Experiment (Cayley *et al*., 2002) show higher pasture production, herbage digestibility, stocking rates and profitability as phosphorus fertiliser applications increase. In 1993, the Grassland Productivity Program (GPP) started in the winter rainfall areas of southern Australia (Trompf & Sale 2000), initiated by the Grassland Society of Southern Australia, funded by the wool industry. In brief, groups of 4-6 farmers were assisted by experienced advisors to compare current management practice in one paddock with productive pasture technology (PPT) in an adjacent paddock. PPT consisted of appropriate fertiliser application; pasture manipulation to balance grass and legume content and higher stocking rates to ensure utilisation of the herbage grown. Over 300 farmers participated in GPP between 1993-2003. This paper reports the impact on the grazing industry 10 years after PPT was introduced.

Results Since 1971, the annual physical and financial performance of 50-75 farms in the 450-800 mm rainfall regions of south-western Victoria has been monitored by the Department of Primary Industries (Anon 2004). Farms voluntarily participate in the Farm Monitor Program (FMP) and stay in the program for around 5-10 years. Farms in the FMP are 40-4600 ha (mean 900 ha) and on average run 5500 sheep and 260 cattle.

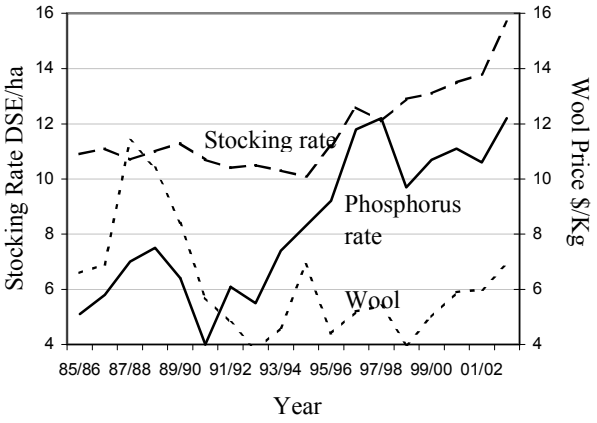

Figure 1 Stocking rate (dse/ha), wool price ($A/kg) and fertiliser use (kg phosphorus/ha) for farms in the FMP 1985-2003

During the 1980's, fertiliser use (mainly phosphorus) was driven largely by wool prices with a peak application rate in 1990 when wool prices reached $A11/kg, followed by a rapid decrease when wool prices fell. However, from around 1994, phosphorus use increased steadily, from 4 kg/ha to 12 kg/ha in 2003, coinciding with GPP and the promotion of PPT. This increase occurred despite wool prices remaining relatively low. In response to higher fertiliser applications, farmers increased stocking rates by 50% from 10 dse/ha in 1994-95 to about16 dse/ha in 2002-03. Farms in the FMP with the highest return to equity continue to use more fertiliser/ha, run higher stocking rates and have higher gross margins per ha than average farms (Anon 2004).

Conclusions GPP fundamentally changed farmer views on fertiliser use, stocking rate and profitability (Trompf & Sale 2000). The Long-term Phosphate Experiment provided the scientific understanding of the grazing systems in southern Australia while GPP allowed farmers to experience and understand the principles of pasture production and utilisation on their own farms. Farmers now understand that fertiliser is a non-discretionary input and that stocking rates (utilisation) must be increased to use the extra higher quality pasture grown. These principles have now moved beyond the farms involved in the targeted extension program (GPP) and into the wider farming community. Based on conservative estimates of $A85/ha higher gross margin ($14/dse and an additional 6 dse/ha), and implementation over 1M ha of southern Australia high rainfall regions, the additional productivity is worth around $A85M/year.

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