The remarkable improvements in Australian mixed farming

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Changes in the mixed crop-livestock farms of southern Australia include steady enlargement of farms and in the proportion of farmland growing crops. There is a greater proportion of broadleaf species among the crops as well as improving quality of wheat and, for the period from 1980 to 2000, increasing wheat yield. New varieties contributed to grain quality and kept pace with evolving diseases. Improved management also contributed to grain quality and provided most of the yield increases. A key management change has been the break-crop benefit of broadleaf crops which control cereal diseases, the importance of which had been previously underestimated. The healthier cereals following break crops respond better to nitrogen fertiliser, which can be confidently topdressed as a tactic in favourable seasons. The increased use of lime, which is needed to grow canola on acid soils, improves the yield of subsequent crops and enables the return of lucerne and barley to previously acidified regions. The additional use of water by higher yielding crops and by lucerne-based pastures is reducing the risk of salinity and waterlogging. Crop yields have fallen in the past decade, mostly because of the direct effect of droughts and also because the benefits of break crops and supplementary nitrogen are not expressed in dry conditions. Partly offsetting the lower returns from crops is increased lamb production, based on more perennial pasture, grazed crops and fodder conserved from droughted crops.

Dr John Angus completed his doctorate in Melbourne, and worked briefly in the Australian Commonwealth Public Service, Canberra, before joining CSIRO in 1973. He worked in the Land Division until 1987 and has since been at CSIRO Plant Industry. He has taken visiting scientist positions at the International Rice Research Institute in the Philippines and at the Swedish University of Agricultural Sciences in Uppsala and Umeå. Dr Angus is a Fellow of the Australian Institute of Agricultural Science and 1992 American Society of Agronomy, 2001. He has been awarded a Medal of Australian Agriculture IN 2006. Dr Angus is a Member of the editorial board of Field Crops Research and former chairman of the Advisory Board of the Australian Journal of Agricultural Research. He is an expert in cereal agronomy, particularly related to nitrogen management, effects of crop and pasture sequences, water use efficiency of dryland crops, crop simulation modelling, and decision-support systems for crop management.

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