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Geoffrey Saul

Department of Primary Industries, Australia

Angela Avery

Department of Primary Industries, Australia

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Ever Graze-More livestock from perennials

Geoffrey Saul and Angela Avery ,Future Farm Industries CRC ,Department of Primary Industries ,
Rutherglen ,Victoria ,3300 Australia . E-mail :geoff_saul@bigpond .com

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Introduction The 550-800 mm temperate pasture regions of southern Australia maintain around 30 m sheep and 7 m beef cattle . However ,many pastures are dominated by annuals due to a failure to use appropriate perennials for the environment or inadequate management of native or introduced perennials . The lack of perennials in these relatively high rainfall regions has lead to environmental challenges including dryland salinity ,wind and water erosion due to low ground cover and declining water quality and biodiversity . Climate predictions are for lower and more variable rainfall . Also ,the profitability of many grazing farms is lower than annual cropping systems .

Materials and methods Ever Graze is developing animal production systems that are 50% more profitable than current systems and simultaneously improve environmental outcomes . Systems are based on perennial species that increase overall production and/or extend the period when quality pasture is available . Both native and introduced perennial species can meet these goals . Three research sites are studying natives such as *Danthonia* , *Microleana* and *Stipa* that suit the shallow acid soils on slopes and hills . In more favourable soils and climates ,three sites are evaluating the use of summer active perennials *Medicago sativa* , *Festuca arundinacea* , *Pennisetum clandestinum* (kikuyu) and *Cichorium intybus* (Chicory) to enhance drought resistance , reduce soil salinity and provide higher quality herbage in summer and autumn than *Lolium* , *Phalaris* or annual pastures . All pastures include *Trifolium subterraneum* and are grazed by merino ewes mated to terminal sires for lamb production .

In addition to the research sites ,around 50 "Supporting Sites" are evaluating new perennial pasture grazing systems on farms in collaboration with farmers and environmental agencies . Each Supporting Site involves 5-30 farmers who trial a new system that they believe will improve both environmental and production outcomes compared to their current practises . The sites test new systems in a wider range of climates and soils under more commercial farming conditions than the research sites .Each site has a local coordinator to ensure appropriate monitoring and extension activities are undertaken .

Results and discussion Animal production data from one site is presented by Sanford *et al* . (2008) . Across the sites ,water use of *Medicago* ,chicory and kikuyu has been greater than for *Lolium* , or annuals ,they have persisted well under drought conditions and used summer rainfall and subsoil moisture to provide green herbage in summer . Lucerne and chicory have been used to "spike feed" ewes 10 days prior to joining in autumn ,resulting in a 15-20% increase in conception rates compared to ewes joined on senescent pasture . Early indications are that the sheep grazing more summer active perennials require less supplementary feed than those on traditional summer dormant species . If the climate changes to have less winter rainfall and more erratic and summer storm rainfall events ,these species are likely to have a greater role in southern Australia .

Supporting Sites are underway with on-farm sites in five states and active involvement of 14 environmental and state agencies . Supporting Site are comparing diverse topics including different grazing management systems ,alternative perennial species , shrub hedges to reduce wind speed and grazing summer active perennials to increase ovulation rates in ewes . Ever Graze is linking production and environmental issues and collaboration at Supporting Sites between farmers ,scientists and catchment groups is a key outcome for the project . Full results from Ever Graze are available on the website www.evergraze.com.au or contact inf@evergraze.com.au to subscribe to a quarterly newsletter .

Reference

Sanford ,P . ,Ryan J . ,Jakobsson ,P . ,Dobbe ,E . and McCready ,E . 2008 . Ever Graze-Prime lamb production on perennial based grasslands in southwest Australia .*Proc XXI International Grassland Congress* .