The Grain & Graze program aims to boost farm profitability across the mixed farming zone of southern Australia, while helping to protect the environment.

A collaborative project, Grain & Graze is funded by four leading Research and Development Corporations - Meat & Livestock Australia, Grains Research & Development Corporation, Land & Water Australia and Australian Wool Innovation Ltd.

The four-year project involves nine pilot regions across Australia.

The program’s three principal objectives are:
- boosting profitability for mixed farmers—particularly during the pasture phase of rotations
- better water quality
- improved health and diversity of plants and wildlife, both on farms and across catchments.

Further information:
www.grainandgraze.com.au

The Northern Agricultural Region—Western Australia

Grain & Graze in the Northern Agricultural Region (NAR) is investigating perennials and grazing cereals in a mixed farming system. The project involves four farmer groups: Mingenew-Irwin, Liebe, Victoria Plains and the Evergreen Group.

These groups are working in collaboration with the Department of Agriculture and Food and the Northern Agricultural Catchments Council. Each of the groups is working with four or five demonstration farmers who are comparing the productivity and profitability of livestock grazing annual pastures, perennial pastures, grazing cereals and crop stubbles. Perennial pastures under investigation include tagasaste, saltbush, sub-tropical perennial grasses (Rhodes, panic, setaria and signal grass) and lucerne.

Grain & Graze in the NAR will also look at:
- quantity and quality trials of perennial grasses
- plant water use in perennial and annual pastures across six sites
- the impact of perennial grasses on nutrient leaching
- the environmental benefits of perennials in a mixed farming system via the national Biodiversity in Grain & Graze project (BiGG)
- the threat of sub tropical perennial grasses as environmental weeds
- perennial grasses and erosion prevention.

Further information:
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The Evergreen Group evolved in the West Midlands district in the 1990s with the aim of promoting perennial pastures. Graziers around Badgingarra started the group. They were looking for pasture species that would survive on their sandy soils, provide fodder over an extended period and slow the rate of recharge.

Trials showed that C4 or summer-growing perennial grasses were potentially very productive and able to survive dry summers.

Rainfall in the Badgingarra district is typically 500 to 600 mm. Both cattle and sheep production are a predominant part of the enterprise mix in the area, with farmers involved in varying amounts of cropping.

Demonstration Farmers

Joe and Jane de Pledge, Jandawanning, Badgingarra
The de Pledge's Badgingarra property, Jandawanning serves an important role in the family's Droughtmaster beef production enterprise, which also includes Kimberley and Pilbara properties. Jandawanning covers 1,500 ha and is used for finishing cattle. The entire property has been re-fenced for cell grazing and stock are run in big mobs and moved daily. Average paddock size is 26 ha and each of the cells is centred around a watering point. Subtropical perennial grasses have been established in nine paddocks.

Graham and Helen Lethlean, Ooranya, Badgingarra
Graham and Helen Lethlean run a mixed farming enterprise that is split evenly between cropping and livestock. About 700 ha is cropped and a further 380 ha is established to tagasaste. The 12 paddocks of tagasaste are reserved for trade cattle and cattle on agistment. Sheep numbers include 2,600 SRS breeding ewes which graze pasture and crop stubbles. The Lethleans are working to boost their stocking rate.

Aubrey, Lisa, Dick and Verna Panizza, Yerramullah Park, Badgingarra
The Panizza family run 9,000 sheep on their two properties, 13 km west of Badgingarra. Sheep and wool production are the predominant activities on Yerramullah Park and Stone End which total 2,400 ha in area. Aubrey has established subtropical perennial grasses on 560 ha over the past 15 years. These C4 grasses enable him to stock an extra 1,600 head of sheep.

Bob and Anne Wilson, Tagasaste Farm, Lancelin
About 50 percent of the 2,000 ha on Tagasaste Farm has been established to the fodder shrub, tagasaste. A further 130 ha has been sown to subtropical perennial grasses. Bob and Anne Wilson run 400 breeders and agist up to 1,500 head of cattle during the growing season. The subtropical perennial grasses have successfully extended the Wilson's growing season and provide useful feed in the event of summer rainfall. Cattle grazing the tagasaste are supplementary fed lupins over the summer months.
Victoria Plains, WA

The Shire of Victoria Plains is located 150 km north east of Perth and covers a diverse array of landscapes and soil types—shallow gravel, deep sandy soils and complex duplex soils. Farmers are involved in cropping and livestock enterprises, with a predominance of livestock in the west of the shire. Many farms contain some salt-affected country, mainly confined to creek lines and gullies. Annual rainfall in the district averages 350 to 500 mm, with a trend in recent years to more rainfall out of the normal, winter growing season.

Demonstration Farmers

Bruce, Anna, Kristin, Tracy and Andrew Lefroy, Round Hill
Kristin Lefroy and his family dedicate 3,400 ha of their 5,700 ha farm, Cranmore Park to grazing. The balance is cropped to wheat, oats, canola or hay in rotation with field peas and pasture (clover, medic, ryegrass). The family run 8,000 stud Merinos and 900 cattle. Lucerne and perennial grasses provide additional feed and the 500 ha of salt country has been planted to saltbush, Rhodes grass, puccinellia and tall wheat grass.

Adrian, Jim and Fiona Brennan, Calingiri
The Brennans crop 1,700 ha of their 2,200 ha property, Harrogate to wheat, lupins, barley and oats for hay. Harrogate supports 4,600 Merinos, as well as prime lambs. A further 1,300 Damars and Dorpers are run on another 900 ha property north of Calingiri. Lucerne, saltbush and tagasaste have been established at Harrogate to slow recharge and provide summer and autumn feed for stock. The family has experimented with perennial grasses and standing fodder crops.

Tim, Graham and Sandy Nixon, New Norcia
Tim Nixon has dedicated the majority of Noc Domini to grazing. The 793 ha property supports 480 Angus cattle and 630 sheep and these stock supply the feedlot on the home farm, Border Reivers (1,680 ha). Noc Domini is run intensively, with 60 ha established to perennial grasses and 40 ha to tagasaste. A further 300 ha is cropped to wheat, canola, oats and hay, in rotation with annual pastures.

Don, Ann, Peter and Sally Nixon, Gillingarra
Don and his family farm four properties at New Norcia, Chittering and Gillingarra. The family run 600 Angus cattle on a 1,100 ha Gillingarra block which was purchased primarily for grazing. Between 40 and 100 ha is sown to oats for hay for their own use each year. Annual pastures consist of ryegrass, blue lupins, Dalkeith and Balansa clover, with a further 100 ha established to tagasaste in 2004.

Don, Chris and Darren Sadler, Wongan Hills
The Sadlers crop 3,000 ha of their 5,200 ha, property, Danubin. A further 2,200 ha is dedicated to grazing, supporting 7,000 Merino and cross bred sheep, plus lambs. Cadiz serradella and Dalkeith subclover have been sown into annual pastures, while 450 ha of low-lying valley floors and creek lines have been planted to saltland pastures. The family has established 70 ha to lucerne and 15 ha to tagasaste.
The Mingenew-Irwin Group (MIG) is a farmer owned grower group based 380 km north of Perth in the Northern Agricultural Region of WA. Annual rainfall across the region is generally 350–450 mm and soil types are typically sand plain and sand over gravel in the west, ranging to heavier soils such as grey clay and red loams in the east.

The Group was established in 1996 to improve economic and environmental sustainability, while demonstrating best practice farming methods. MIG has a current membership of 93 farmers, with the average farm size 3,500 ha. Most members run a mixed farming operation, cropping 50–70 percent of their property to cereals and lupins, alongside a smaller but equally important livestock enterprise involving sheep and cattle.

There is an increasing level of interest in boosting the productivity of non-cropping country amongst members. This has typically been through the sowing of serradellas, medics and perennial pastures such as sub tropical grasses, saltbush, tagasaste and rhagodia.

### Demonstration Farmers

**Craig and Donelle Forsyth, Irwin**

Craig and Donelle Forsyth have re-fenced the 2,800 hectares on their property, Avoca in a wagon wheel cell grazing system and rotationally graze the 54 paddocks of tagasaste, subtropical perennial grasses and annual pasture. The Forsyths have a share profit alliance with pastoralists and take on more than 1,500 pastoral cattle in April and finish them for export in October and November. They also run 300 Santa-Droughtmaster breeders of their own.

**Rob and Sally McTaggart, Mingenew**

Rob and Sally McTaggart crop 1,800 ha of their 5,000 ha Mingenew property, Bolinda. The cropping rotation involves wheat, lupins and barley. Bluebush country on Bolinda is providing useful grazing for their 700 Angus cows and heifers and is grazed with adjacent crop stubbles.

**Alan and Joy Heitman, Mingenew**

Alan and Joy Heitman crop about 1,000 ha of their 2,750 ha property, Arena to wheat, lupins and barley and incorporate a pasture phase. Arena supports 380 Murray Grey cows and up to 1,500 sheep. The Heitmans have successfully established 360 ha of tagasaste and 200 ha of subtropical perennial grasses on white sandy soils, which has been a great success.

**Rob, Ros and Andrew Gillam and Sally O’Brien, Irwin**

The Gillam family run a mixed farming operation spanning three properties and 8,500 ha. About 2,400 ha is cropped to wheat and lupins and the family run 6,000 Merino breeders, 350 breeding cows and up to 1,200 head of trade cattle for the export market.

About 130 ha of subtropical perennial grasses and 310 ha of tagasaste has lifted productivity on sandy country and makes use of summer rainfall.
The Liebe Group is a grower group located three hours north of Perth in the Northern Agricultural Region of WA. Members’ properties cover more than one million hectares in the Dalwallinu, Coorow and Perenjori shires. The district is characterised by sandplain through to heavier loamy soils and lies within the medium to low rainfall zone, with annual average rainfall 250 to 400 mm.

Cropping is the focus among members, with wheat being the major cereal crop grown in rotation with lupins, barley or canola. However many growers still include livestock for rotational and risk aversion purposes.

The Liebe Group was established in 1997 to address the concern of the local area being isolated from existing agricultural research and development. The group embraces a whole systems approach to agriculture, while working to sustain and enhance the rural environment.

Demonstration Farmers

**Gary, Kerry and James Butcher, Pithara**
Gary, Kerry and James Butcher crop 2,200 ha of their 3,900 ha Pithara property. The rotation involves wheat, followed by pasture or two seasons of wheat followed by pasture. The Butchers run 1,300 Merino ewes in a self-replacing flock. About 1,100 ha on the property is salt affected and 16 ha has been planted to alleys of eucalypts and saltbush with perennial grasses and lucerne in the inter-row. The alleys provide useful shelter at lambing time.

**Keith, Rosemary and Boyd Carter, Wubin**
The Carters crop 4,200 ha of their 6,000 ha property to wheat–lupins or wheat–pasture. Some 1,800 ha is set aside for grazing and 20 percent of that area is resown to various serradellas. The family run 2,500 Merino ewes in a self-replacing flock. Subtropical and temperate perennial grasses and saltbush have been established on a 34 ha salt affected area.

**Ross and Lyn Fitzsimons, Buntine**
The Fitzsimons’ 2,200 ha cropping rotation involves wheat–lupins or wheat–pasture with serradellas, subclover and medic sown as well as barley or oat fodder crops. The grazed area covers 2,600 ha and supports 1,600 Merino ewes. Saltbush has been planted in blocks to overcome the autumn feed gap and reduce recharge.

**Colin and Jill McGregor, Maya**
Livestock production was the focus of the McGregor’s enterprise and 1,800 ha of fodder crops were grown on the 3,000 ha property. In 2005, up to 5,700 head of pastoral cattle were taken on during the growing season through a share-profit arrangement. The McGregors also ran 300 Droughtmaster cows of their own and used a feedlot to finish about 25 percent of cattle. Saltbush was established to reduce recharge and provide feed. Colin and Jill farmed at Maya until the end of 2006 when they decided to take time out to travel.

**Tony White and Julie Symons, Miling**
Tony White crops 1,400 ha of his 2,100 ha property, *Genocanna* to wheat, barley and oats in rotation with lupins or pasture. He runs 1,300 Merino ewes in a self replacing flock and usually dedicates 600 ha to pasture. He has 700 ha of salt affected country and has established 60 ha to puccinellia, tall wheat grass, saltbush, bluebush and saltwater couch.