

# Turning unproductive land into profits in Brookton



## Project Snapshot

Land Managers:	Andrew and Paula, Des and Sue Pike Brookton
Location:	Brookton
Rainfall:	360mm (280mm growing season)
Farm size:	3000ha
Crops:	50% crops
Livestock:	50% sheep, 2800 Merino ewes, 1200 weaners
Soil types:	Mixed bag of deep sandy and loamy duplexes, pales sands, sand over gravels and sand over clays





## Perception of adopting this system

If you have unproductive land, chances are Brookton farmer Andrew Pike knows what to do with it. For years, the fourth generation farmer had hundreds of hectares going to waste and uncovered, wind-eroded pockets of the farm were literally blowing away and taking potential profits with them.

Today the Pike family farm paints a different picture with productivity at an all time high and the future prospects looking much brighter. Clay and lime spreading, native shrubs, perennial pastures, sandalwood and pine trees are now all part of his farming system.

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Last year the Wheatbelt NRM started a project using clay, lime, pasture and crop strategies on two different paddocks on the farm to combat wind erosion and non-wetting soils. The trial paddocks today are in much better shape. Wind erosion is no longer an issue and Andrew has been able to grow clover successfully for the first time on them.

Sheep are the biggest profit drivers on the 50 per cent cropping, 50 per cent livestock farm. The 2800 head Merino flock are bred with Merino and Poll Dorset rams to produce replacement ewes and cross-bred lambs for the meat and wool markets.

## Perennial pasture solution to wind erosion

In April 2011, Lure H<sub>2</sub>O® was applied to some of the sandy, wind-eroded paddock, and lucerne and barley were seeded in June. Both crops germinated well and the barley was harvested in November. This season the lucerne is still growing strong and has kept the soil covered all year. Andrew has grazed the lucerne rotationally quite a few times for a week at a time with a high stocking rate. He spray grazed it with Jaguar® in July this year for broadleaf weed control, and will follow with a spray for grass weeds.

Spading areas of the paddock last year before seeding resulted in some weed-free strips. Andrew attributed the control to the 4.5m spader promoting weed germination, which helped herbicide efficacy and the burial of the weed seeds.

Andrew had thought about claying for several years but knew the initial outlay of upwards of \$750/ha would be a risky investment. He was also unsure as to the right mix of perennial pastures that would suit the wind-eroded pockets of the farm. With the Wheatbelt NRM grant he was able to set aside the risks to the farm if it didn't work, however the outcome was anything but disappointing.

‘The lucerne and clay trials were definitely worthwhile,’ he said. ‘The lucerne has helped with wind erosion and has added benefits for sheep feed, and the clay has been great for the non-wetting soils; giving us higher yields and the ability to grow clover.’

Andrew is so impressed he has decided to integrate the practices to other parts of the farm

The clay trial was implemented with the help of contractors who helped locate a clay pit, bulldoze it and spread it.





*Clay Pit*

The results have been as good or better than expected, despite a dry spell between mid-August and mid-September last year which made the wheat mature before the later rain. Andrew believes yields would have been much better than average if they had more rain at the right time.

Inputs on the lucerne paddock last year included 40kg/ha MAP in April, 2t/ha of limesand and 10kg of limesand coated on the lucerne seed. Superstrike® coated lucerne variety Wilpena® sulla was seeded at 1.9kg/ha. This was seeded with lucerne varieties Stamina® GT6 and Cropper® 9.5 seeded at 2.4kg/ha, with 500g/ha of inoculant. Vlamingh barley, seeded at 15kg/ha for early cover, yielded 700kg/ha last harvest after being grazed during the year.

A 'control' section of the lucerne paddock did not receive any spading with results showing that spading increased in the paddock.

'Everywhere else has come up with silver grass, capeweed, ryegrass,' Andrew said.

The perennial pasture now has turned the 11h, once barren paddock into a profitable part of the farm.

'It's great sheep feed; it solved the wind-erosion problem and the ground is covered in green feed in summer,' Andrew said.

## **Clay and lime help non-wetting problem**

The second troublesome paddock was covered with non-wetting and acidic soils. Firstly a clay pit was excavated in a 43 ha paddock at the start of last year, and clay was spread in March at 150t/ha. Limesand was also applied at 1t/ha last year which brought the pH to 5.2 which has helped plant growth, although Andrew commented that their sands normally have a better pH than their heavy soils.

'Clover had never grown on this paddock before—now it is. Before claying I could only graze it for a couple of weeks in winter; now I can graze it any time of the year for a lot longer,' Andrew said.

'It was 40ha doing nothing, costing me money, now it's making me money.'

Other than the initial outlay (\$750/ha) for claying and \$40/ha for lime, it has improved the farm's bottom line overall.

Andrew grows Vlamingh barley and is trying Buloke for the first time this year, however he has found that Buloke didn't have the early vigour that Vlamingh did on his sandy, non-wetting soils.

'I might replace the barley with Magenta wheat which is reasonably vigorous on our good soil but I am yet to trial it on non-wetting soils,' he said.

The highest yielding area of the clay trial paddock was a small area of loamy soil which was incorporated using the offset disc plough because the soil was too hard and had more tree stumps reducing the efficacy of the spader.



*This area used to be completely bare before claying*

## Native shrubs, sandalwood and pine for extra fodder and income

On 30 ha of unproductive land on another part of the farm Andrew has planted 5000 Rhagodia and 5000 Saltbush shrubs with a 'Caring For Our Country' Federal Government grant. Over the past four years he has planted Saltbush on other parts of the farm and now has over 100 ha of native shrubs which he uses for sheep feed.

Five years ago Andrew planted sandalwood (*Santalum spicatum*) in partnership with the Forest Products Commission. Various Acacia species were planted as hosts, however, *Acacia acuminata* (Jam) were the only ones to survive.

There is also 100ha of pine trees planted on non-productive land for a wind-break and to reduce wind erosion and, hopefully, to turn a profit in 30 year's time.



Clay Clumps

## Lucerne

Wilpena® sulla:

- Dual purpose variety, recommended for intensive forage operations.
- Ready to graze in 90–120 days.
- Can grow large amounts of high quality feed.
- Long day dormancy: lower water requirements during summer months.
- Can be cut for silage or hay.
- Suitable for all stock classes.

Stamina® GTG

- Combines useful winter growth, great persistence and the ability to tolerate set stocking of sheep.
- Provides excellent yield and quality during warmer growing seasons.
- Maintains stand density over many years.
- Good resistance to most lucerne diseases and pests.
- Suitable for all stock classes.

Cropper® 9.5

- Ideal for winter grazing and hay production.
- Sheep can graze cereal stubble with high protein lucerne throughout the following summer, autumn and beyond.
- Ideal for a 3–4 year break between cereal crops.
- Quick to establish – suits under sowing of cereals.
- Excellent for high quality hay.
- Good overall disease resistance.
- Suitable for all stock classes.

Superstrike®

- Contains seed protection and enhancement additives within its seed treatment.
- Delivers excellent results across the full range of clover and lucerne varieties.
- Contains insecticide for Red Legged Earth Mite and Blue Oat Mite - specific to clover and lucerne.
- Contains fungicide for diseases Pythium and Fusarium (for subterranean clover and lucerne only).
- Contains strains of nitrogen-fixing Rhizobia bacteria - specific to clover and lucerne.
- Contains a fine lime base for localised pH correction around the seedling.
- Recommended for use in all sub-surface and broadcast sowings in both cultivated and nil tillage situations and for all sowings of sulla.
- Gaucho® a systemic insecticide for protection against Red Legged Earth Mite and Blue Oat Mite - specific to sulla.
- Quality assured strains of nitrogen-fixing Rhizobia bacteria - specific to sulla.

(Information provided by PGG Wrightson Seeds.)



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