# Phalaris holds the key in the south west

**Article by** Paul Omodei, agVivo

## Farm info.

**Grower:** Gary and Ian Ryan

**Location:** Goodonga, Manjimup

**Soil type:** Gravel loam, some sand patches

**Arable area:** 400 ha

**Ave annual rainfall:** 850 mm

**Enterprise:** Sheep, first-cross heifers, and horticulture.

Gary and Ian Ryan farm in the high rainfall area of Manjimup and constantly strive to produce more kilograms of product per millimetre of rain.

Their horticulture enterprise consists of cauliflowers, broccoli and cabbage and forms their 'cropping' rotation in an otherwise stock dominated enterprise by land area. Their farm income is driven by the high input, high value horticulture crops, but interestingly these crops are also key drivers of pasture productivity.

Following horticulture crops, 'Sticks and Ironman', as they're commonly known, re-sow high production pastures turning the 'free residual nutrients from cropping' into valuable feed and seed. These pastures produce very high biomass for hay and silage, whilst also providing seed for the following years pasture renovation program.

With a limitation at the 'shoulders' of the season (early autumn and late spring), the Ryan's first tried perennials as part of the Warren River Perennials Project in 2006. They started with lucerne, chicory and tall fescue to assist these feed deficit periods. Limited by the winter feed from these species to sustain a 16–18 DSE/ha winter stocking rate, the Ryans looked for something more robust that could survive high winter stocking rates, as well as provide late season quality feed to finish lambs. The only way to increase winter productivity from the lucerne/chicory was to over-sow annual ryegrass, which made them disappear very quickly!

### More winter feed

From lucerne and chicory, they moved to kikuyu and strawberry clover in the wetter gully areas of their farms, but again, poor winter productivity from these winter waterlogged soils didn't help their high winter stocking rate. They did however, provide excellent summer feed and sacrifice areas for autumn deferment of ewes prior to lambing in early June. With a strong winter stocking rate in consideration, the key objectives for the Ryan's were to finish more lambs on green feed rather than in a feedlot on grain, have a regenerating pasture for 3–5 years that would sustain heavy grazing pressure and provide green feed at the break of season and end of spring. Enter phalaris.

While experiencing a very good spring in 2012, the Ryan's decided to knock out a problem 13 ha wet paddock. It grew mainly silver grass, winter grass, dock and capeweed and so they re-sowed it to phalaris, trialling the Landmaster and Holdfast varieties. Lime was applied at 2 t/ha, with a small amount of fertiliser applied with the seed to assist germination. There was concern that the fertiliser contained muriate of potash but this did not appear to hinder germination of the phalaris, which was sown into excellent moisture conditions in early November. The paddock was grazed lightly in December once there were three true leaves, which would restore the energy (sugars) in the base of the plant for new growth if summer rain was received.

An excellent mix of phalaris and sub-clover

**TABLE 1. Establishment costs**

| Activity | $/ha |
|---|---|
| Seed: 5 kg/ha phalaris @ $12/kg | $60 |
| Chemical: 2 L Roundup, 1L Dominex, 0.3 L Talstar, 1 L Asulox | $40 |
| Fertiliser: 25 kg K-Till | $15 |
| Operations (contract seeding/spraying) | $30 |
| **Total cost** | **$145** |

## Environmental benefits

Following the December grazing the phalaris continued to grow and a further inspection in February with a trusty shovel showed roots tapping into moisture at 40–50 cm depth. These findings were encouraging at that time of year and suggested that phalaris may also be a beneficial species to assist in the lowering of the water table. The Ryan's were particularly pleased at what opportunities this presented for other similar areas that suffer from winter waterlogging and poor pasture composition. These winter waterlogged areas often become very hard setting in summer and are dominated by summer weeds such as dock and mint weed. Other options to improve soil structure on the soils are high rates of gypsum and deep ripping which are both expensive and in the past have shown relatively short term results. The ability to use a plant to do the deep ripping for you while leaving the Karri tree roots in the ground makes good sense to the Ryan's! The potential of a plant like phalaris to tap into nutrient rich zones at 10-20 cm soil depth, which occur after horticulture crops, is also of great interest to them.

## Costs and returns

Typically establishment of perennials in the high rainfall area is expensive with costs upwards of $250/ha (including a lost grazing cost in the year of establishment of $50/ha). The Ryan's have managed to decrease these costs by having good preparation in the previous year, particularly with weed control (see Table 1). This allows them to have excellent germination from lower seeding rates with minimal weed issues. They are also refining the art of establishing perennials in autumn under a cereal cover crop so as to reduce the lost grazing in the year of establishment. This also creates the opportunity for them to harvest a cash crop if the situation arises. In this instance, the establishment of perennials is cost neutral, as there is no lost grazing and the income obtained from the grain offsets the establishment costs.

## Financial benefits

It is difficult to quantify the dollar benefits of sowing a pasture of this type on a small scale area but since planting perennials and using various systems to finish lambs, the Ryan's are feed lotting 50% less lambs prior to market. The focus on the annual system has a large impact on this result and the Ryan's have a strong focus on deferment of annual pastures to 1,200 kg/ha of feed on offer (FOO) prior to introducing lambing ewes in mid-June. The ability to defer and reach target FOO levels comes on the back of key strategies including perennials such as phalaris, kikuyu and chicory as well as dry sowing cereals into longer term pasture paddocks to increase early autumn feed.