Annual Medic Pastures at MAC 2009

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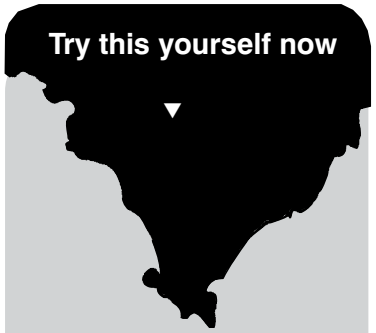
DEMO



Location: Minnipa Ag Centre
Rainfall
Av Annual: 325 mm
Av GSR: 242 mm
2009 Total: 421 mm
2009 GSR: 333 mm

Paddock History
2008: Wheat

Soil Type
Red sandy loam

Plot size
Broadacre demonstration

Yield Limiting Factors
Nil

Livestock
Enterprise type: Self replacing merino
Stocking rate: 10 – 20 DSE/ha

Environmental Impacts
Soil Health
Soil structure: More even grazing
Compaction risk: Low

Social/Practice
Time (hrs): Standard
Clash with other farming operations: Standard management
Labour requirements: Minimal, check sheep and spraying grass and insect pests

Economic
Cost of adoption risk: Low

Key messages

- **A regenerated medic pasture in conjunction with a sown forage crop provided the production to sustain a 1000 DSE flock on 200 hectares in 2009.**

Why do the demonstration?

The aim of this demonstration is to assess the role of annual medics as a break crop in a wheat-sheep mixed farming system, by measuring the biomass produced over the growing season followed by the retention of the pasture residue over the summer autumn period, then subsequently assessing the impact of the pasture in the following cereal phase in terms of yield and grain quality.

The demonstration is also based on concerns related to maintaining groundcover following broadleaf crops, especially legume crop residues that are being grazed following senescence, and the protection of the soil from potential erosion.

How was it done?

Paddock North 4 (area 40 ha) on Minnipa Agricultural Centre had a medic pasture that regenerated following 64 mm in March and established following 25 mm in late April. There was no fertiliser applied, selective chemicals for grass and blue green aphid control were applied in July.

The paddock was stocked during the growing season in June and August (lactating ewes @ 20 DSE/ha), and following pasture senescence during September and October with lambs at 10 DSE/ha.

Pasture cuts were taken from both within and outside exclusion cages each month during the growing season to measure total pasture production and pasture growth rates.

What happened?

There were approximately 200 plants/m^2 medic plants established in June.

The amount of pasture produced and the monthly growth rates are presented in Table 1. In 2009 the annual medic pasture provided a high production quality feed source, a level of production that supported 25 DSE/ha over the late winter spring period.

The 5 + t/ha of medic biomass produced in 2009 and grazed over the spring had 3 t/ha of biomass remaining at the end of the year.

What does this mean?

With approximately 75% of MAC farm being cropped and only ~200 hectares available for grazing over the growing season, the medic in conjunction with a sown forage crop provided enough late autumn and winter feed to sustain a 1000 DSE flock (see Responsive Farming Using VRT article).

Along with the measureable economic grazing resource benefit it will also have produced nitrogen for the subsequent cereal phase along with a disease break as a result of grass control. Based on an estimate of 25-28 kg of N for each tonne of medic biomass produced, the question now is on the impact of the nitrogen input on the cereal phase, what will be the crop production outcomes in 2010 from an extra 150 kg/ha N input?

Table 1 Pasture production (t/ha) and growth rates (kg DM/ha/day)

	2 June	29 June	18 July	4 August	21 August
Cumulative production (t/ha)	1.1	2	2.9	3.9	5.3
Pasture growth rates (kg DM/ha/day)	27	33	47	59	82

Table 2 Pasture residue reduction (t/ha)

	21 August	27 September	31 October	4 December	31 December
Pasture residue (t/ha)	5.3	5.3	3.7	3.0	3.0

Table 3 Gross margin summary of paddock N4 Minnipa Agriculture Centre, 2009

Area (ha)	40
Cost of pasture/ha ($/ha)*	20
Total annual stocking rate (DSE/ha)	6.3
Gross margin ($/ha)**	138

**Pasture costs included herbicides and machinery expenses.*

***Gross margin was calculated by multiplying the total annual DSE/ha (based on pasture utilisation of 1 kg DM/DSE/day) by $25 (estimated annual value/DSE) and subtracting variable costs.*

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