8.6 Farmer Experiences With Grazing Winter Cereals – Vic

Locations: Seven locations:
- Barabool Hills
- Birregurra
- Derrinalum
- Inverleigh (2 sites)
- Moriac
- Rokewood

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Summary of Findings:
This paper presents the experiences of seven farmers grazing winter cereals across four different types of enterprise. The economic benefits were positive in all cases and ranged from $10.80/ha to $84.06/ha. When comparative grain yields were also included, this range became $21.56/ha to $430.80/ha.

The conservative economic approach did not take into account the strategic value of feed in the winter. Farmers identified reducing supplementary feeding and improved pasture drymatter on spelled paddocks as benefits additional to the direct grazing value.

One example illustrates the whole farm implications if crops could be used to allow all pasture paddocks to be spelled on the farm for one month (July). Late winter pasture cover would increase by 50% and change in enterprise margin would rise by more than 15%.

The drymatter available at the start of grazing ranged from 340 kg/ha to 1500 kg/ha. A direct comparison of grain yield from grazed and ungrazed crops was made for two examples. One example resulted in no change in grain yield due to grazing and the other showed an increase of 1.2t/ha.

Background:

Recent work in the Grain and Graze program has shown that winter cereals can be grazed and then successfully taken through for silage, hay or grain if the agronomy and grazing system is appropriate. With the large areas now cropped in South West Victoria, it means winter cereals represent a huge feed resource for grazing at a time of year when pasture production is low. The challenge is to ensure the correct grazing approach is applied to maximise the grazing benefits without compromising crop production.

The Grain and Graze program was keen to test the findings from extensive trial work with a group of farmers to see if the theories of grazing cereals provided the desired response under a range of conditions and farming situations. The financial gain from the exercise was also calculated.

Demonstration design:

Paddocks on seven properties were monitored. The background to the farm business and reason for trialing cereals are presented:

- Rob Batson, Moriac, had grazed oats for many years but was grazing wheat and barley for the first time. Grazing the crop was to 'ease the squeeze' on stock over winter when pasture availability is limited.
- Peter Fitzgerald, Inverleigh had grazed *Cape* barley in the past but this was his first try at grazing wheat.
- Garry Halliday, Derrinallum manages two properties of which 2,450 ha is cropped. 2007 was the first time Garry Halliday had tried grazing cereals.
- Wayne Johnston, Rokewood manages a property where 2000 ha is cropped. This was the first time Wayne had grazed winter cereals and was done to avoid having to sell merino weaners into a falling market.
- Nathan Scott, Inverleigh, had tinkered with grazing cereals before but 2007 was his first serious try at grazing winter crops. The exercise created interest in how the various crops may be used to benefit in the whole farm operation. Deliberations on the whole farm implications of grazing many winter crops are presented.
- Mick Shawcross, Barabool Hills has grazed cereals for the past six years as a way of filling the winter feed gap. He is now refining him management of cereals to maximise the benefits to the whole farm system.
- Scott Stewart, Birregurra has a 1000 cow beef herd. He started cropping for the first time in 2007, sowing 10% of the farm to barley. This was the first time he had grazed a winter cereal.

To conduct a simple economic analysis, standard gross margin values have been used based on a five year average gross margin for prime lamb, merino and beef enterprises in South West Victoria (Victorian Monitor Farm, project, DPI Hamilton). Standard gross margins applied were:

- Prime lambs $21.70/dse or 6c/dse/day
- Wool sheep $15.30/dse or 4c/dse/day
- Beef cattle $17.30/dse or 5c/dse/day

Calculations are based on a gross margin value per DSE per grazing day. These values are considered very conservative since they take no account of the high strategic value of feed in mid winter or the production benefits from increased liveweight.

In instances where stock grazed for a substantial period of time and liveweight gain was recorded, the actual sale value and weight gains were applied. Most analysis also does not take account any impact (+/-) on subsequent grain or dry matter yields.

Mick Shawcross, Barabool Hills

▼ Table 8.20: Trial Details

Crop:	*Yerong* barley @ 100 kg/ha
Paddock size:	20ha (in three paddocks)
Fertiliser:	MAP @ 100 kg/ha
Sown:	First week of June
Livestock:	60 crossbred ewes with 85 lambs (26 kg lwt)
Grazing	10 weeks after sowing (mid August)
Supplement:	Mineral lick and hay
Weed control:	Crop sprayed for broadleaf weeds after grazing (grazing opened up the crop canopy).

▼ Table 8.21: Observations

DM at start of grazing:	705 kg/ha
Plant establishment:	165 plants/m^2
Crop growth stage:	GS 24
Stocking rate:	50 DSE/ha
Grazing duration:	10 days
DM at end of grazing:	400 kg/ha
Animal growth rates:	Ewes: 337 gm/day Lambs: 296 gm/day
Crop yield:	3.5 t/ha (no comparison with ungrazed made)

Economic value of grazing

- This was calculated by assigning an economic value of $0.06c for each DSE grazing day
- 50 DSE/ha X 10 days @ $0.06/DSE = $30/ha (conservative)

Benefits

- The cereals provides extra winter feed and means there is less reliance on bought in feed. Grazing cereals helps integrate the crop phase into our pasture renovation program.
- We aim to have a whole farm pasture cover of 800-1000 kg DM/ha on July 1 so the lambs don't get a check in their growth and cereals help us reach our target".

Issues

Only minor issues

- the sheep were a bit daggier when grazing the red wheat.
- the variety of triticale was seen as a problem because it flowered early which limited grazing. However this was offset by being able to also graze the red wheat.

Wayne Johnston, Rokewood

▼ Table 8.22: Trial Details

Crops:	*Kosiuszcko* triticale @ 100 kg/ha *LR 1078/1077* red wheat @ 100 g/ha
Paddock size:	148 ha
Fertiliser:	DAP @ 120 kg/ha
Sown:	23 April (dry)
Livestock:	1500 merino wether weaners
Grazing	60 days, 4 June – 3 Aug
Supplement:	None
Weed control:	Crop sprayed for broadleaf weeds 7 days before grazing (spray/graze technique)

▼ Table 8.23: Observations

DM at start of grazing:	434 kg/ha
Plant establishment:	Not recorded
Crop growth stage:	GS21
Stocking rate:	5.25 DSE/ha (triticale)
Grazing duration:	60 days
DM at end of grazing:	632 kg/ha
Animal growth rates:	175 gm/day (average)
Crop yield:	Tritcale frosted, cut for hay yielding 8.5t/ha Red wheat approx yield 4.5t/ha (no non grazed comparison)

Economic value of grazing

- This was calculated by assigning the sale value of $1.45/kg LWT, a weight gain of 10.5kg and a stocking rate of 5.25hd/ha. The resulting economic benefit was $79.93/ha.

Benefits

- Not having to sell sheep at depressed prices and then adding weight to them. It appears to be fewer weeds in the grazed triticale than in the ungrazed comparison.
- Another benefit was getting the stock off the pasture which meant more pasture was available in the lead up to lambing
- By using a combination of cereals with different maturity patterns, it enabled grazing to continue for a longer period.

Issues

Only minor issues

- the sheep were a bit daggier when grazing the red wheat.
- the variety of triticale was seen as a problem because it flowered early which limited grazing. However this was offset by being able to also graze the red wheat.

Garry Halliday, Derrinallum

▼ Table 8.24: Trial Details

Crops:	Mix of *Amarok* red wheat @ 70 kg/ha and *Silverstar* wheat @30kg/ha
Paddock size:	100 ha
Fertiliser:	MAP @ 100 kg/ha
Sown:	26 April (dry)
Livestock:	Cross bred ewes with autumn lambs
Grazing	Commenced 23 July
Supplement:	Minerals and hay
Weed control:	None

▼ Table 8.25: Observations

DM at start of grazing:	800 kg/ha approx
Plant establishment:	Not recorded
Crop growth stage:	*Amarok* GS 25 *Silverstar* GS 32
Stocking rate:	36.9 DSE/ha
Grazing duration:	38 days
DM at end of grazing:	1500 kg/ha approx
Animal growth rates:	Not recorded
Crop yield:	5.3 t/ha (no comparison with ungrazed made)

Economic value of grazing

- This was calculated by assigning an economic value of $0.06c for each DSE grazing day.
- 36.9 DSE/ha X 38 days @ $0.06/DSE = $84.13/ha (conservative)

Benefits

- Removing sheep from pasture enabled other paddocks to be spelled.
- Pastures were not grazed as hard over winter, resulting in more feed in late winter and spring

Issues

- Occasional animal health issues despite mineral supplementation and hay being offered.

Scott Stewart, Birregurra

▼ Table 8.26: Trial Details

Crops:	*Cape* barley @ 90 kg/ha
Paddock size:	19 ha
Fertiliser:	Sowing DAP @100kg/ha In crop Urea @ 100kg/ha
Sown:	Mid June
Livestock:	120 cows and calves
Grazing	22 August
Supplement:	None
Weed control:	None

▼ Table 8.27: Observations

DM at start of grazing:	1100 kg/ha
Plant establishment:	Not recorded
Crop growth stage:	GS24
Stocking rate:	94.5 DSE/ha
Grazing duration:	8 days
DM at end of grazing:	468 kg/ha
Animal growth rates:	Not recorded
Crop yield:	5.0 t/ha grain (from part of paddock) 16 t/ha silage wet (5.6 t/ha DM) (from part of paddock)

Economic value grazing

- This was calculated by assigning an economic value of $0.05c for each DSE grazing day.
- 94.5 DSE/ha X 8 days @ $0.05/DSE = $47.25/ha (conservative)

Benefits

- Enormous potential to increase overall farm productivity by providing grazing, then silage or hay, or harvest grain and bale straw.
- It will value add to the pasture feed source.

Issues

- Possible difficulties if grazing stock on cultivated paddocks in a wet winter.
- Having suitable classes of stock (eg weaner steers or replacement heifers) rather than mature cows may be an issue in the future.

Peter Fitzgerald Inverleigh

▼ Table 8.28: Trial Details

Crops:	*Kellalac* wheat @ 80kg/ha
Paddock size:	5 ha (2 x 2.5 ha cells)
Fertiliser:	DAP @ 80 kg/ha
Sown:	1 June
Livestock:	154 merino ewes & lambs
Grazing	27 August
Supplement:	Nil
Weed control:	Pre grazing for wireweed

▼ Table 8.29: Observations

DM at start of grazing:	340 kg DM/ha
Plant establishment:	210 plants/m^2
Crop growth stage:	GS28
Stocking rate:	77 DSE/ha
Grazing duration:	2 days
DM at end of grazing:	112 kg/ha
Animal growth rates:	Not recorded
Crop yield:	Grazed 4.3t/ha grain, 6.7t/ha straw Ungrazed 4.3t/ha, 7.5t/ha straw

Economic value of grazing

- This was calculated by assigning an economic value of $0.04c for each DSE grazing day
- 77 DSE/ha X 2 days @ $0.04/DSE = $21.56/ha (conservative)
- Additional grain production 0 t/ha @ $350/t = $0/ha
- Total economic gain: $21.56/ha

Benefits

- Free feed.

Issues

- None

Rob Batson, Moriac

▼ Table 8.30: Trial Details

Crops:	*Amarok* red wheat @ 100kg/ha
Paddock size:	32 ha (in two paddocks)
Fertiliser:	DAP @ 100 kg/ha
Sown:	June
Livestock:	Merino wethers
Grazing	September
Supplement:	Nil
Weed control:	Nil

▼ Table 8.31: Observations

DM at start of grazing:	1500 kg/ha
Plant establishment:	210 plants/m^2
Crop growth stage:	GS28
Stocking rate:	30 DSE/ha
Grazing duration:	9 days
DM at end of grazing:	500 kg/ha
Animal growth rates:	Not recorded
Crop yield:	Grazed 8.4t/ha grain, 8.3t/ha straw Ungrazed 7.2t/ha grain, 9.7t/ha straw

Economic value of grazing

- This was calculated by assigning an economic value of $0.04c for each DSE grazing day
- 30 DSE/ha X 9 days @ $0.04/DSE = $10.80/ha (conservative)
- Additional grain production 1.2t/ha @ $350/t = $420/ha
- Total economic gain: $431/ha

Benefits

- More feed at a time of the year when feed is tight.
- Grazing cereal took pressure off pasture paddocks and helped keep condition on the sheep.

Issues

- Not sowing early enough.

Nathan Scott, Inverleigh

Two *Gairdner* barley paddocks were grazed with merino and crossbred ewes for only two weeks, before the growth stage of the crop required stock to be removed to avoid grain yield loss. However the experience created interest in the potential of grazing cereals might have to the whole farm operation.

An examination was performed to determine the impact that both grazing cereals and drilling cereals into lucerne would have on the livestock operation and pasture availability at point of lambing (1 August). Only a portion of the crop grown was used in the calculation.

Available feed sources

Crops	93 ha *Gairdner* barley
	40 ha of lucerne oversown with *Gairdner* barley
Pasture	507 ha perennial pasture
Livestock	2200 merino ewes and replacements and 700 crossbred ewes

IMPLICATIONS FOR THE WHOLE FARM OPERATION

The modelling highlights the financial impact grazing cereals can contribute to whole farm profitability. On the figures generated, the gross margin of the merino operation would increase by $2.60/DSE and $3.47/DSE for the crossbred enterprise.

Potential benefits of grazing cereals

Grazing cereals enabled pastures to be rested, resulting in an increase in pasture drymatter over winter. Feed budgets indicated that deferring grazing of the pasture by grazing the cereal instead, whole farm pasture cover would increase from 700 kg/ha to 1100 kg/ha by August 1.

Computer simulations using Grassgro performed by Libby Salmon of the CSIRO, concluded that by deferring grazing on all pastures for July, an extra 50% DM would be available across the property on 1st August. These simulations also indicated that a 17% increase in gross margin could be expected in a self replacing merino flock and a 16% increase in a crossbred flock where grazing of pastures was replaced with grazing of cereals for July in an average year.