sheep connect south australia

Sheep/wool and crop integration

Information Sheet

Benefit of Sheep/Wool in a mixed farming system - Information Sheet 1 (of 3)

Connecting people in the business of sheep

Introduction

The mixed cropping and sheep farming system is common across southern Australia and the majority of South Australia. It has a stronger fit in some regions of SA than others, depending on soil type and the amount of unarable land being farmed.

There are a number of reasons why farmers chose to operate both cropping and sheep, these include:

- Risk mitigation (cropping and livestock income is not directly correlated),
- Exploiting spatial variability (land capability variation),
- Efficient resource allocation (labour, land, machinery, capital),
- Management focus (where skills and expertise lie),
- Management agility (ability to make tactical changes in season between enterprises),
- Production complementarities (reduced input costs or increased efficiencies) and
- Resource maintenance (soil fertility and stability etc.).

Source: Bell and Moore (2012)

Whatever the reasons, the most profitable mixed farming businesses seek synergy, not conflict between their livestock and cropping enterprises. This involves implementing the key profit drivers for both livestock and cropping enterprises, and eliminating enterprise conflict. The ability to integrate multiple enterprises and create synergies between them ultimately drives profit in a mixed farming business.

The 'Benefit of Sheep/Wool in a mixed farming system' series of Information Sheets provide an overview of three core areas including:

1. Sheep/wool and crop integration
2. Managing risk
3. Managing livestock feed sources

Challenges with multi-enterprise systems

These production systems need to contend with:

1. Internal dilution of scale
2. Duplication of capital
3. Potential enterprise conflict that can quietly erode margins in one or more enterprises
4. Diversion of focus and management attention
5. Reduced simplicity.

Primary Farm business profit drivers

A national MLA project has found that the superior profitability achieved by the Top 20% producers is a function of four primary profit drivers.

These are:

1. Gross margin optimisation
2. Developing a low cost business model
3. People and management
4. Risk management

It is the interaction of these that results in very different profit outcomes and if one of these is overlooked it will compromise long term profit potential at some point.

Within each enterprise there are a number of key profit drivers.

CONTACT
Jodie Reseigh
M: 0428 103 886 • **E:** jodie.reseigh@sa.gov.au

awi Australian Wool Innovation Limited

SA Sheep Industry Fund
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Government of South Australia
Primary Industries and Regions SA

These include:

Key cropping enterprise profit drivers

1. Operational timeliness
    - Across the full calendar year for all operations
    - This will leverage 10% to 15% more yield
2. Agronomy
    - Robust crop rotation and crop management
    - A disciplined approach to variable costs (less than 40% of turnover)
3. Machinery utilisation
    - 0.7 : 1 Machinery Investment : Income ratio or lower
4. Labour utilisation
    - Greater than $600,000 turnover per full time equivalent (FTE)

Key sheep (dual purpose) enterprise profit drivers

1. Labour productivity
2. Stocking rate
    - In areas with more than 350mm rainfall the use of improved pasture species and fertilisation
3. Fertility and lamb survival
4. Adult fleece value (target more than $60 per ewe per annum long term)
    - Reduce fleece contamination and vegetable matter (VM)
5. Turn-off weight (target greater than 48kg live weight (LWT) lambs in a Decile 5 season)

Integrating livestock and cropping

Effective integration requires a high level of implementation skill, taking into consideration the cross over between enterprises. The risk of enterprise conflict eroding profit margins in one or more enterprises also needs to be managed. The business also needs to have the available skill sets to get the best out of both enterprises?

This can occur when:

1. A livestock enterprise offers the most profitable break crop available to the crop rotation.
    a. Legume based pastures can add $30 to $100 worth of soil nitrogen per ha.
    b. Lambs can be finished on pulse stubbles and can add $50 to $100 per hectare to faba bean gross margins.
2. Lambs can be turned-off at heavier weights at a time when there is a limited supply of these lambs available, ensuring good prices.
3. The availability of legume stubbles increases the ability to spring lamb in dryland production systems as there is greater confidense that lambs will grow to target market weights.
4. Lucerne and livestock are integrated
    a) Livestock are grazed on lucerne over winter and spring and then lucerne is locked-up for seed production in summer

Table 1: **Summary of MLA project national results**

Item	National Top 20% producers by Return on Equity	Average of the Remaining 80% of National producers
Return on Equity (ROE)	7.8%	1.4%
Return on Assets Managed (ROAM)	7.8%	3.9%
Profit as % Income	28%	5%
Gross margin per Ha (cropping)	$664	$431
Gross margin per Ha (livestock)	$392	$241

b) Lucerne is cut for hay in spring and then livestock graze over summer and autumn.
c) Lucerne utilises summer rainfall or shallow water tables to provide out of season pasture feed.

5. Wheat/Medic or Cereal/Medic systems with low cost, productive self-regenerating pastures.
6. Livestock are grazed on permanent pastures in frost or waterlogged prone areas.
7. Breeding stock are utilised to manage crop stubbles and eat spilt grain to reduce mice numbers.
8. Livestock are utilised for canopy management in early sown cereal crops, providing the crops have low ryegrass levels.
9. Dry sowing of pasture feed paddocks can be used to test seeding equipment and train operators.

Cropping margins can be eroded at the expense of the livestock enterprise when:

1. Livestock are grazed on volunteer cereals or summer weeds
   - The summer growth will utilise moisture and nutrients and build-up disease and pests
   - It is preferable not to graze at all but never past mid-March.
2. Shearing in April
   - April is a "Golden" month for cropping businesses, for preparation and early sowing
   - February and March should also be used for cropping preparation
   - Being late with 10% of your seeding program can reduce total farm profit by 20%
3. Grass freeing of medic, clover, or vetch pastures is delayed as this will allow root diseases to build-up and carryover to the following cereal crop.
4. Paddock size reduces cropping efficiency
5. Cropping activities are delayed, due to other enterprises
6. Cereal crops are sown into cereal or grassy based pastures
7. Grazing cereal crops with moderate to high ryegrass levels as grazing will reduce the competitiveness of crops and allow more rapid build-up of ryegrass numbers.
8. Grazing stock on paddocks to be windrow burnt to reduce weed seed levels as they will scatter stubble residues and reduce the intensity of the fire in the windrow.

Both cropping and livestock enterprises suffer when:

1. Sowing feed or fodder crops in late April, May, or June
   - Late April is the optimum time for sowing canola and other break crops
   - May is the optimum time for most crops
   - May or June sown pasture feed or fodder crops are compromising the ability of these pastures to productively accumulate dry matter before reduced day light hours, colder temperatures (soil and air) and frost all slow leaf emergence rate, reducing pasture growth rates in kg of dry matter per hectare per day.
2. The farming system is unnecessarily complex.
3. There is not sufficient opportunity to have time-off and recharge either weekly, monthly, quarterly or yearly.

Keep the farming system as simple as possible as this enables greater focus, increased labour productivity, better mind set and wellbeing, and less enterprise conflict.

Integrated livestock and cropping systems can be simplified by:

- Limiting the number of crop types and varieties sown.
- Limiting the number of livestock enterprises.
- Restricting shearing and lambing to once a year.
- Reducing livestock labour requirements, during critical cropping periods, particularly seeding.

Profitable integration indicators

- 30% turnover retained as net profit
- >6% return on assets managed (ROAM)
- Finance coverage ratio of >4:1
- >6% return on equity
- >$600,000 turnover/FTE
- >80% equity (long-term)

(Source: L.MXF.0001 MLA Final report, 2018)

(Source: J. Reseigh)

References

Bell L, Moore A (2012). Integrated crop-livestock systems in Australian agriculture: Trends, drivers and implications. Agricultural Systems 111, 1-12.

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