Grazing ewes on dual-purpose wheat

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What we know…

• Wheat crops can be grazed
• High nutritive value
• Comparable grain yields
• The winter “feed gap”
But some issues ...

• Inconsistent performance of young stock

• High ewe losses
Growing lambs

• Dove and McMullen (2009)

• Improved lamb growth rates by mineral supplementation

• Magnesium (Mg) and Sodium (Na)

• Not always a response (Dove et al, 2012)
So what about ewes…

- High requirements
- Anecdotal reports of high ewe losses
- Metabolic diseases
  - hypocalcaemia
  - pregnancy toxaemia
  - hypomagnesaemia
Mineral profile of wheat compared to ewe requirements

% DM

- Ca
- Mg
- Na

- Green: wheat forage
- Light grey: pregnancy*
- Dark grey: lactation*

* CSIRO (2007)
Field experiments

• Balldale 2010
  - 292 Merino ewes
  - single- and twin-bearing

• Cookardinia 2011
  - 144 Coopworth x Merino Ewes, twin-bearing

• Test the effect of feeding a basic supplement
  - MgO, lime, salt (2:2:1)
Field experiments

• Balldale
  - 3 ewe mortalities
  - subclinical: 8 hypocalcaemic;
    1 hypomageseamic

• Cookardinia
  - no ewe deaths
  - one subclinical hypocalcaemia

• No apparent effect on ewes from feeding supplement
Field experiments – Results cont.

• Balldale
  - Small increase in growth rate of twin-born lambs with supplement (258 v. 243 g/hd.day)
  - no effect on single-born lambs

• Cookardinia
  - high lamb growth rates and survival
  - no effect from supplementation
So what are farmers seeing?

• Surveys of producers in Hume LHPA
  - 202 respondents to questionnaire

• Comparative survey
  - Surveyed some of the respondents in a semi-structured interview
Questionnaire

• 43% of respondents had grazed late-pregnant or lambing ewes on dual-purpose wheat

• In 2010, 92% provided some type of supplement

• Dystocia, preg tox., foot abscess and grass tetany important in 2010

• Some reports of high ewe health issues 2005-2009
Comparative survey

• Compare “high loss” (n=20) to “normal” (n=23)

• Mortality rates in “high loss” group 8.6%

• Metabolic diseases

• Higher BCS in “normal” flocks (3.2 v. 2.8)

• Mineral supplements important
Minerals supplied to ewes while grazing crop

Percentage of producers within group

- **Ca**: Normal flock: 80% vs. High loss flock: 60%, P=0.1
- **Mg**: Normal flock: 80%, High loss flock: 40%, P<0.05
- **Na**: Normal flock: 100%, High loss flock: 60%, P<0.05

Legend:
- Solid bar: Normal flocks
- Open bar: High loss flocks
Conclusion

• Ewes may be grazed on wheat during late pregnancy/lambing

• BUT may be susceptible to metabolic diseases

• Supply *ad libitum* access to mineral supplements that include Magnesium, Sodium and Calcium

• Body condition score and stressors
So what does this mean for the system?

• Modelling a portion of a mixed farm with ewes allowed to graze wheat (AusFarm)

• 400 hectares lucerne/sub clover grazed rotationally

• +/- access to dual-purpose wheat
Lambing time in the Hume LHPA (mixed farms)

- Medium Merino ewes joined to meat sheep breed
- Replacements purchased
- Lambs sold at median age 18 weeks
- Stocking rate 10 ewes/ha
- Area of wheat available 350ha
- Grain to maintain condition score >2.0, and feeding during last trimester to maintain BCS >2.5
Average wean weight (kg)
Average sale weight (18 weeks) (kg)

- **No crop**
- **Crop**

Graph showing the average sale weight over 18 weeks from 1 June to 15 August.
Kg lamb (18 weeks) per ha pasture

- No crop
- Crop
Gross margin $/ha of pasture (SR 10)

- Blue line: no crop
- Red line: crop

Graph shows the gross margin for pasture from 1 June to 15 August, with a peak around 17-20 June and a decline towards 15 August.
Conclusion - modelling

• Making an area of crop available for winter-lambing ewes to graze increases production

• July lambing fits well with crop availability

- Median date for crop reaching 850kg/ha was 9 July (1970-2010).

- Under grazing rules average of 50 days grazing wheat
Acknowledgements

• Supervisory team:
  - Michael Friend, Jim Virgona, Hugh Dove, Ed Clayton and Marie Bhanugopan
  - Jan Lievaart and Hume LHPA

• Drum and Hulme families as collaborators, and producers who participated in surveys

• Australian Wool Education Trust, NSW Rural Assistance Authority and FFI CRC for funding
An alliance between Charles Sturt University and NSW Department of Primary Industries

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Model of growth rate response against time

Predicted ADG at FOO 1000 kg DM/ha

Graph showing predicted average daily gain (ADG) at FOO, 1000 kg DM/ha, over different dates.