The Use of Feed Supplements for Grazing Sheep

Produced for the CRC for Premium Quality Wool undergraduate program by; Prof. James Rowe, The University of New England.
Needs of the manager and animal

• Define the economic objectives and understand the costs of feeding
  – from what aspects of supplementary feeding will you actually make money?
  – What are all of the costs?

• Define the limits in terms of animal welfare
  – animals sick and dying just not acceptable
Selection of supplement

• Price per unit of first limiting nutrient

• Other factors
  – weeds
  – storage
  – tradability
  – feeding out - ease and frequency
  – safety for livestock
  – residues
  – confidence & experience
Interval of feeding and substitution

Substitution rate

Intervals between feeds (days)

Source: Rowe et al. (1991)
Cumulative losses in sheep fed daily or weekly

Losses (% of total)

Days on drought feeding

Daily
Weekly

Source: Franklin (1952)

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Effect of starch on live weight gain in sheep fed barley or lupins

Live weight change (g/day)

Interval of feeding (days)

Lupins

Barley

Source: Godfrey et al. (1993)
Effect of starch/VM on live weight gain in sheep fed barley or lupins

Live weight change (g/day) vs. Interval of feeding (days)

- Lupins
- Barley
- Barley+vm

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Source: Godfrey et al. (1993)
Sheep grazing on stubbles: wool growth with different supplements

Clean fleece weight (kg)

Level of supplementary feeding (g/d)

Source: Rowe et al. (1987)
Spring born weaner lambs in Southern Australia.

Minimum weight in December to ensure 70% survival over summer = 16 kg

Feeding for survival: target animals at risk

No. | Animals at risk
---|---

<table>
<thead>
<tr>
<th>Weight in December</th>
<th>No.</th>
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<tbody>
<tr>
<td>16 kg</td>
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<td>22 kg group average</td>
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</table>

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Cereal stubbles: amount on offer (kg/ha)

<table>
<thead>
<tr>
<th></th>
<th>Start (Jan)</th>
<th>End (May)</th>
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<tbody>
<tr>
<td>spilt grain</td>
<td>30</td>
<td>0</td>
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<tr>
<td>weeds</td>
<td>200</td>
<td>50</td>
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<tr>
<td>leaf and chaff</td>
<td>500</td>
<td>400</td>
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<tr>
<td>stem</td>
<td>1500</td>
<td>900</td>
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### Cereal stubbles: digestibility (%)

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<td>81</td>
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<tr>
<td>weeds</td>
<td>39</td>
<td>48</td>
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<tr>
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<td>49</td>
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<td>stem</td>
<td>45</td>
<td>42</td>
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## Cereal stubbles: protein (%)

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<td>leaf and chaff</td>
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<td>6</td>
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<td>stem</td>
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</table>

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