Management of Temperate Perennial Pastures for Wool Production: Botanical Changes

Produced for the CRC for Premium Quality Wool undergraduate program by;
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Progressive changes in pastures of the northern slopes and tablelands of NSW

<table>
<thead>
<tr>
<th>Time</th>
<th>Species type</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td>European settlement</td>
<td>Tall, warm season native perennials</td>
<td>Kangaroo grass (<em>Themeda australis</em>)</td>
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<td></td>
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<td>Poa (<em>Poa sieberana</em>)</td>
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<td></td>
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<td>Purple wiregrass (<em>Aristida ramosa</em>)</td>
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<td>Introduction of sheep</td>
<td>Short, warm season native perennials</td>
<td>Redgrass (<em>Bothriochloa macra</em>)</td>
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<td>Cool season annuals</td>
<td>Rat’sTail grass (<em>Sporobolus elongatus</em>)</td>
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<td>Increased stock numbers and</td>
<td>Short year-long green perennial</td>
<td>Weeping grass (<em>Microlaena stipoides</em>)</td>
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<td>superphosphate use</td>
<td>native grasses</td>
<td>Wallaby grass (<em>Danthonia spp.</em>)</td>
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<td></td>
<td>Sown exotic legumes</td>
<td>White clover (<em>T. repens</em>)</td>
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<td></td>
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<td>Sub clover (<em>T. subterraneum</em>)</td>
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<tr>
<td>Increased fertiliser use</td>
<td>Sown exotic perennial grasses</td>
<td>Phalaris (<em>Phalaris aquatica</em>)</td>
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<td>(1950’s - 1970’s)</td>
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<td>Cocksfoot (<em>Dactylis glomerata</em>)</td>
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<td></td>
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<td>Perennial Ryegrass (<em>Lolium perenne</em>)</td>
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</table>
Persistence of fully-improved pastures in Northern NSW: 10 sheep per ha

Annual variation in mean fleece weight (CV): 9%

Source: Hutchinson (1992)
Persistence of fully-improved pastures in Northern NSW: 15-20 sheep per ha

Annual variation in mean fleece weight (CV): 11.5%

Source: Hutchinson (1992)
Persistence of fully-improved pastures in Northern NSW: 20-30 sheep per ha

Annual variation in mean fleece weight (CV): 20.2%

Source: Hutchinson (1992)
Surveys of perennial pastures in Victoria

- **SW Victoria, 500-950 mm rainfall:**
  - on average, pastures contained:
    - 12% sub clover (25% is considered satisfactory)
    - 15% sown grasses (25% is considered satisfactory)
    - 58% of volunteer grasses: annual and perennial
    - 15% broad-leafed weeds
  - only 25% of pastures contained $\geq 30\%$ sub clover
  - only 15% contained $\geq 30\%$ improved grasses

- **Sth Victoria, 750-800 mm rainfall:**
  - 2% of sheep pastures resown annually
  - 40% of pastures with $< 20\%$ legume
  - high incidence of low fertility perennial grasses

Source: Quigley et al. (1990, 1993); Ward and Quigley (1992)
Priorities when returns are high

Priorities when returns are low

Community interest

Soil

Plants

Animals

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