CRC for Premium Quality Wool

Management of Annual Pastures for Wool Production: Stocking Rate and Sheep Production

Produced for the CRC for Premium Quality Wool undergraduate program by;
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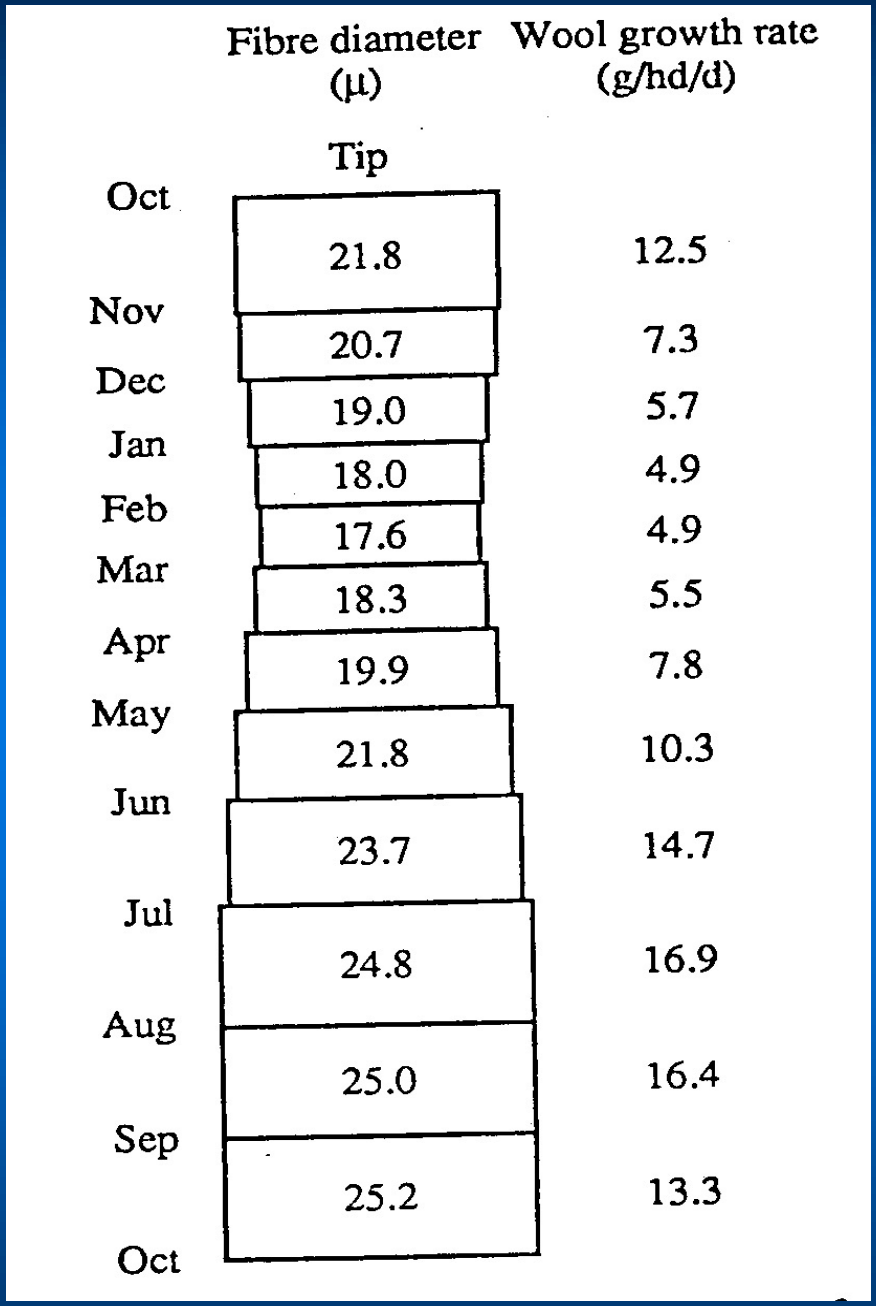
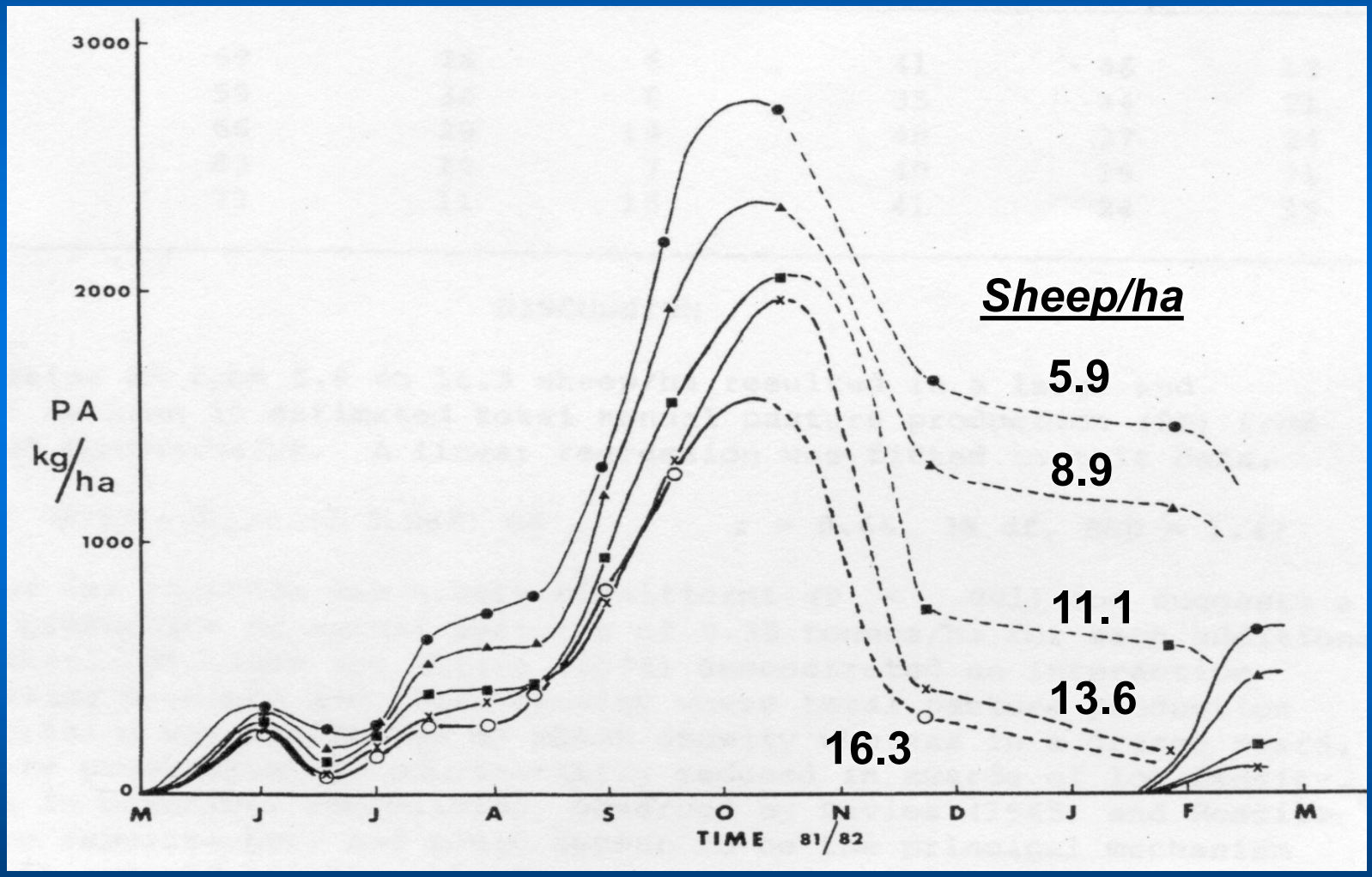
Average wool fibre profile from an unsupplemented, 2 year old spring shorn wether grazing annual pasture at Mt. Barker, when set-stocked at 10 wethers/ha.



Brad Crook
Source: Doyle and Thompson (1992)

Pasture availability vs stocking rate: Kojonup, WA



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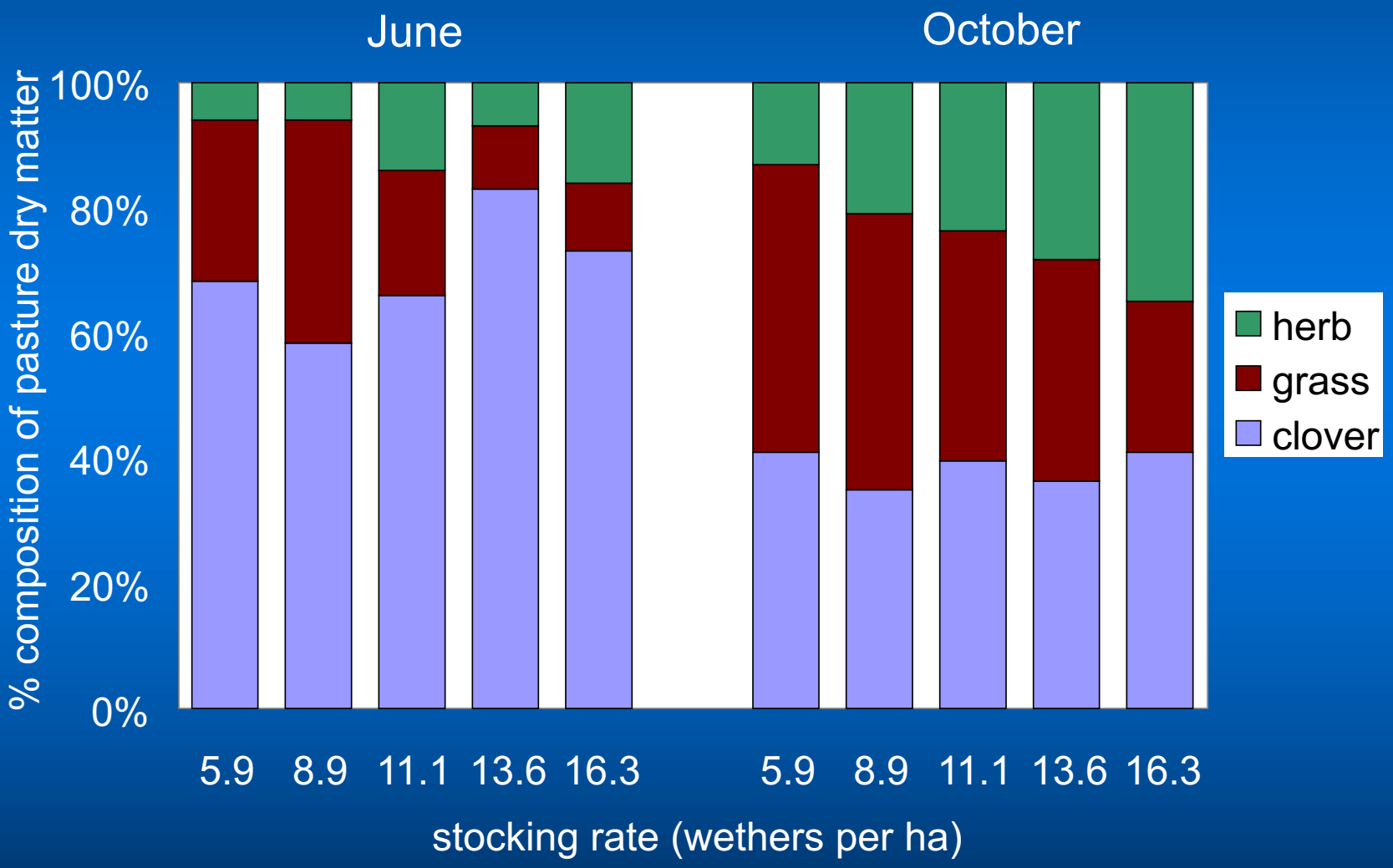
Source: Dunlop et al. (1984)

Botanical composition vs stocking rate: Kojonup, WA



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Source: Dunlop et al. (1984)

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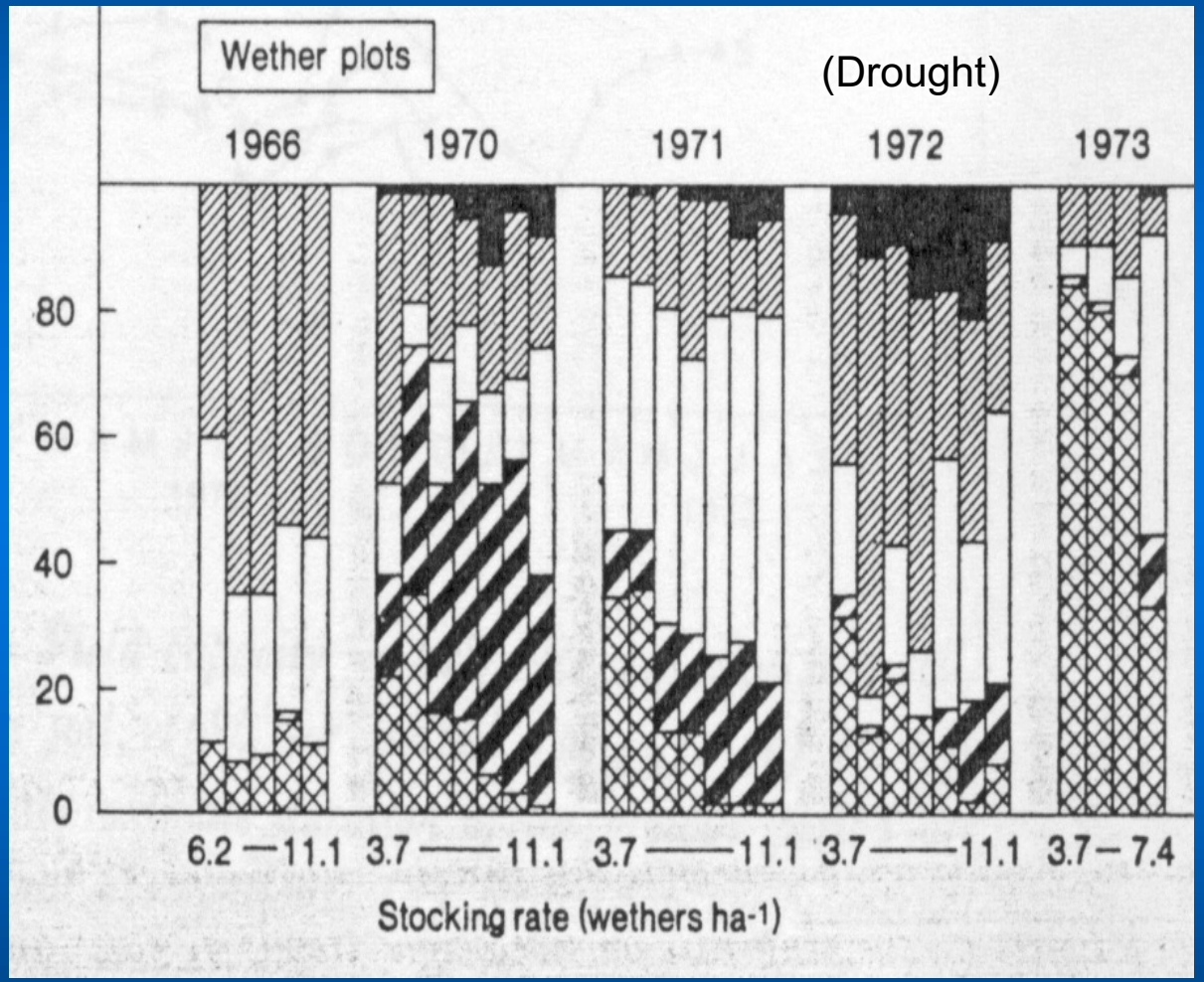
Botanical composition vs stocking rate: Northern Victoria



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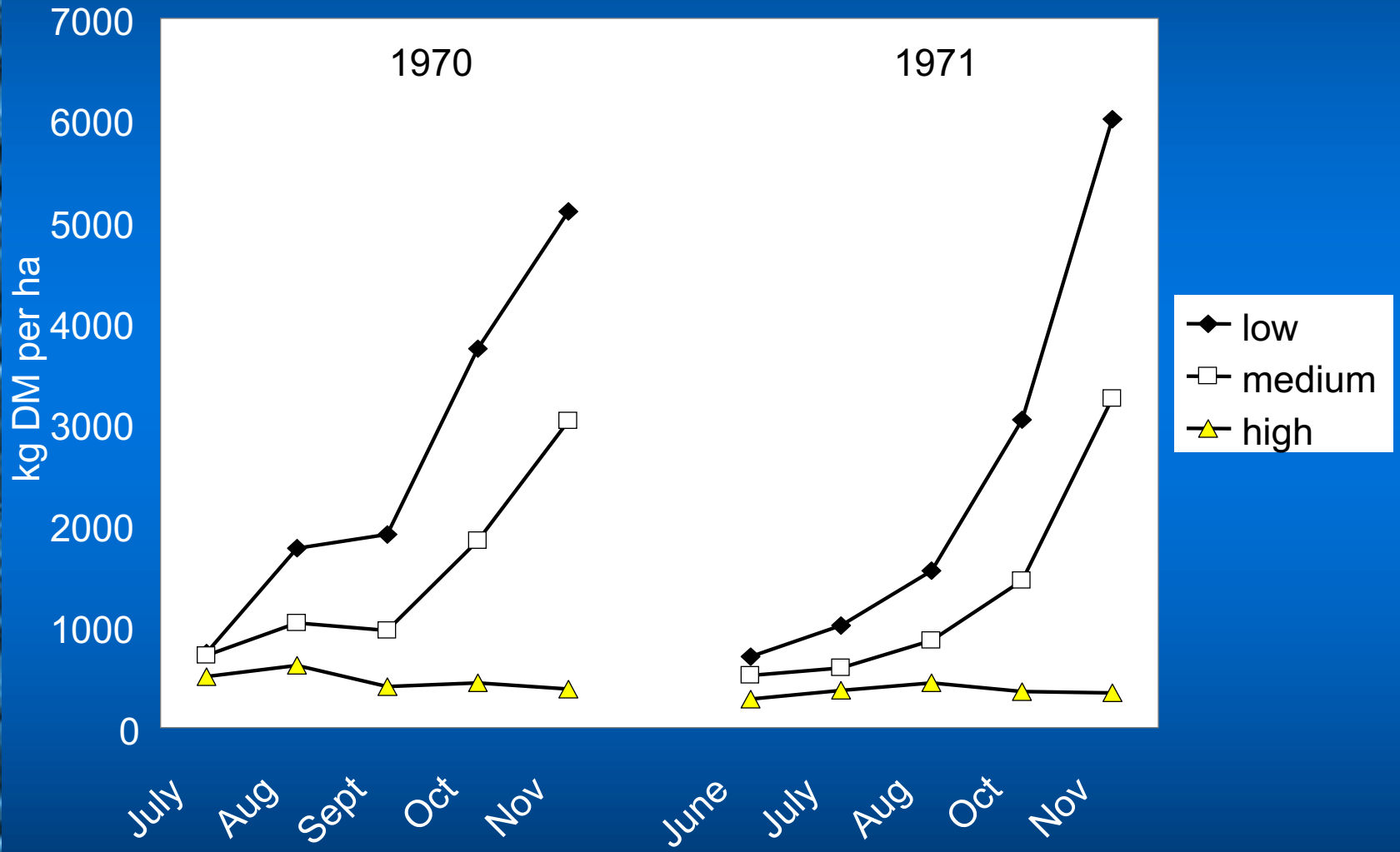
Source: White et al. (1980)

Pasture availability vs stocking rate: Kybybolite, SA



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Source: Brown, T. (1976)

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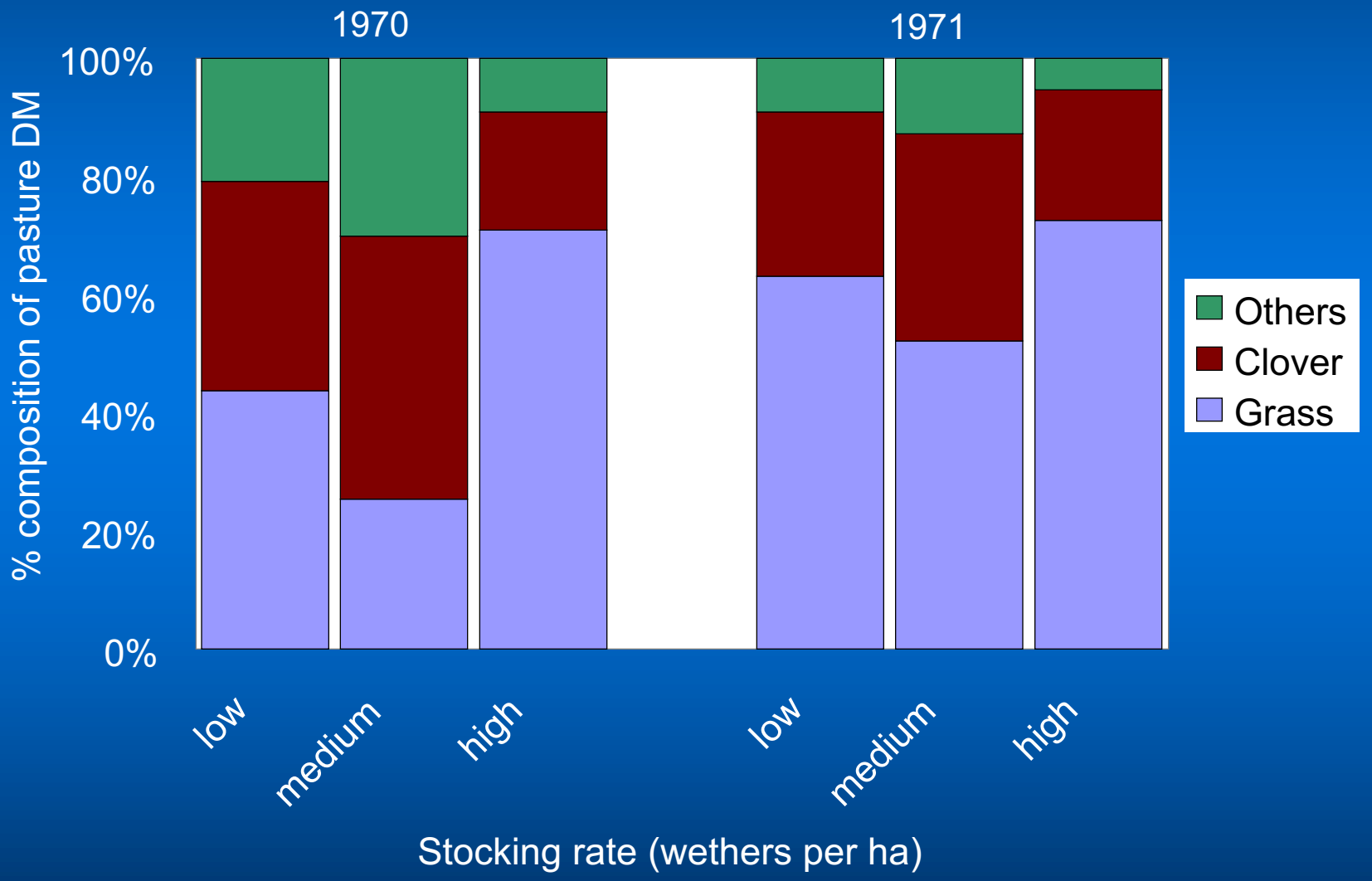
Botanical composition vs stocking rate: Kybybolite, SA



Brad Crook
Source: Brown, T. (1976)

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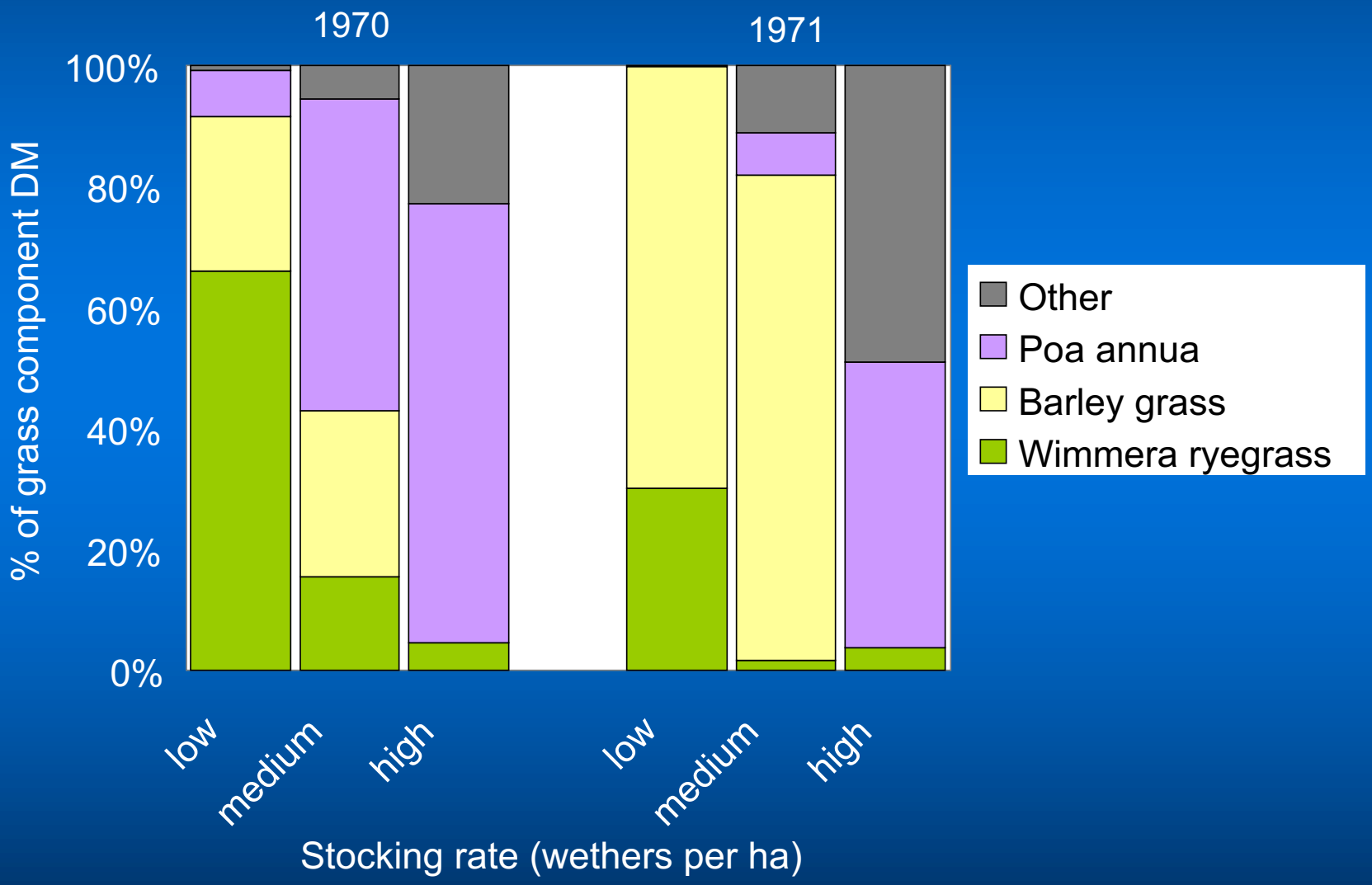
Grass component vs stocking rate: Kybybolite, SA



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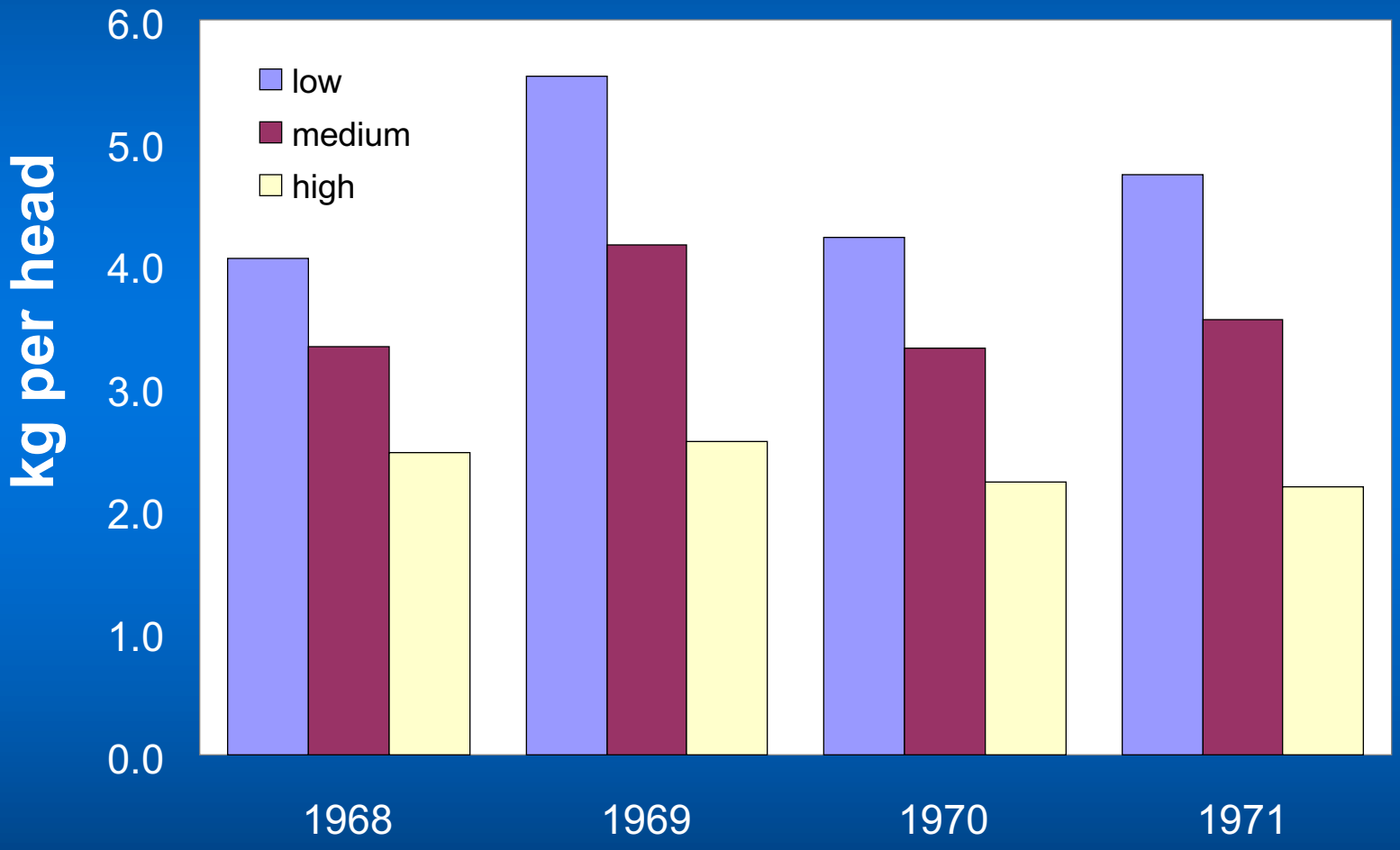
Source: Brown, T. (1976)

Clean wool production vs stocking rate: Kybybolite, SA



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Source: Brown, T. (1976)

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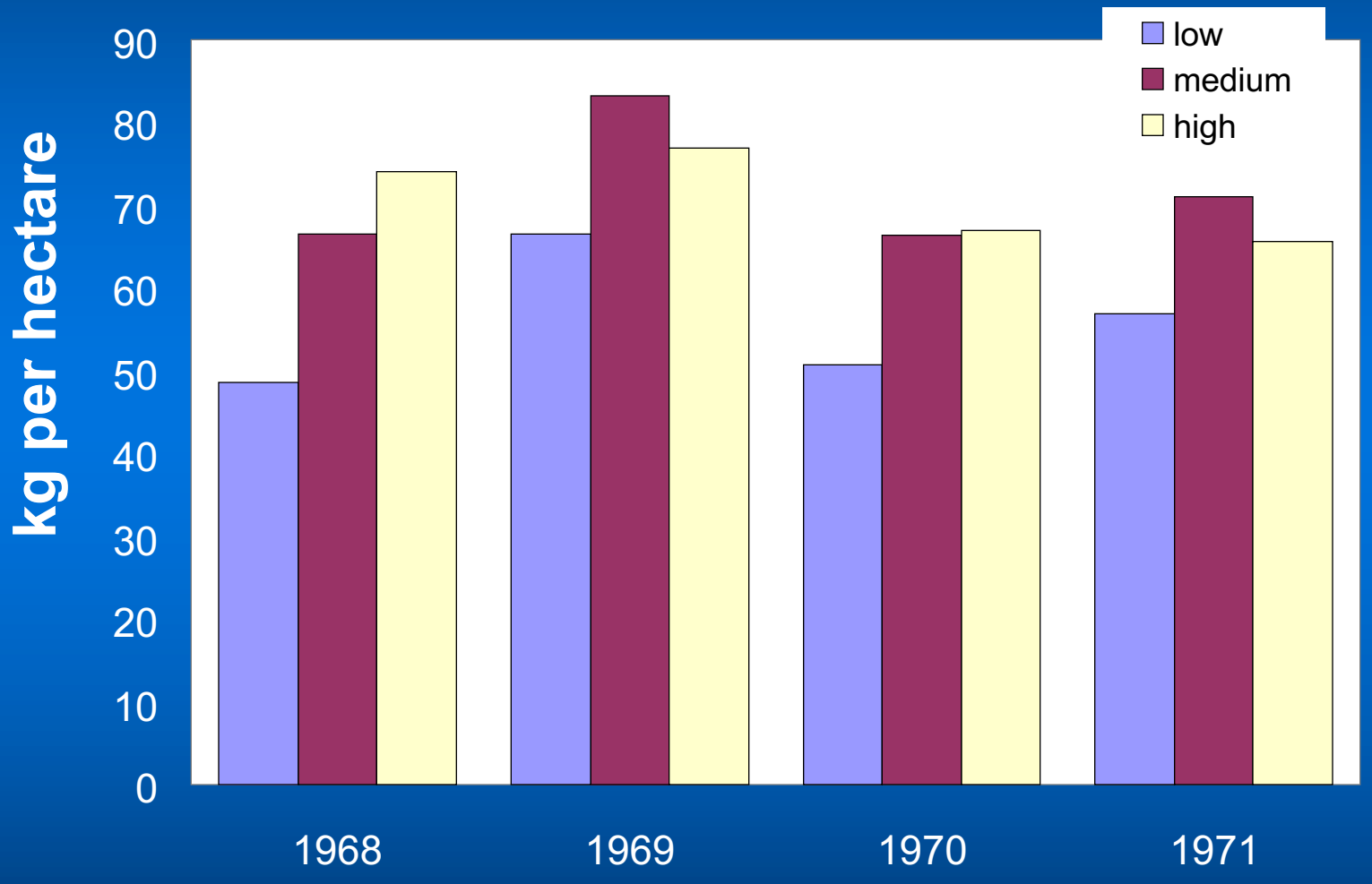
Clean wool production vs stocking rate: Kybybolite, SA



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Source: Brown, T. (1976)

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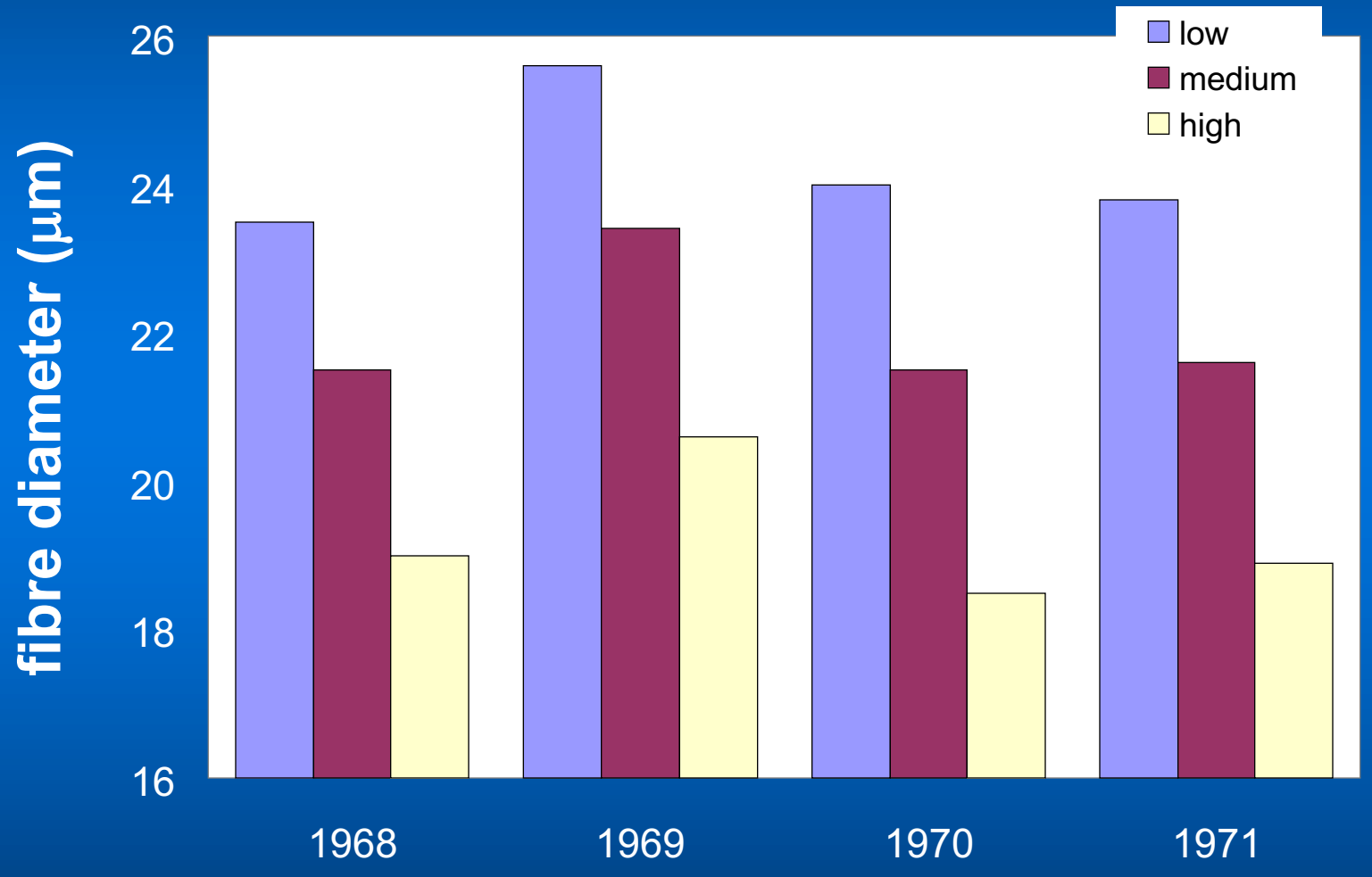
Fibre diameter vs stocking rate: Kybybolite, SA



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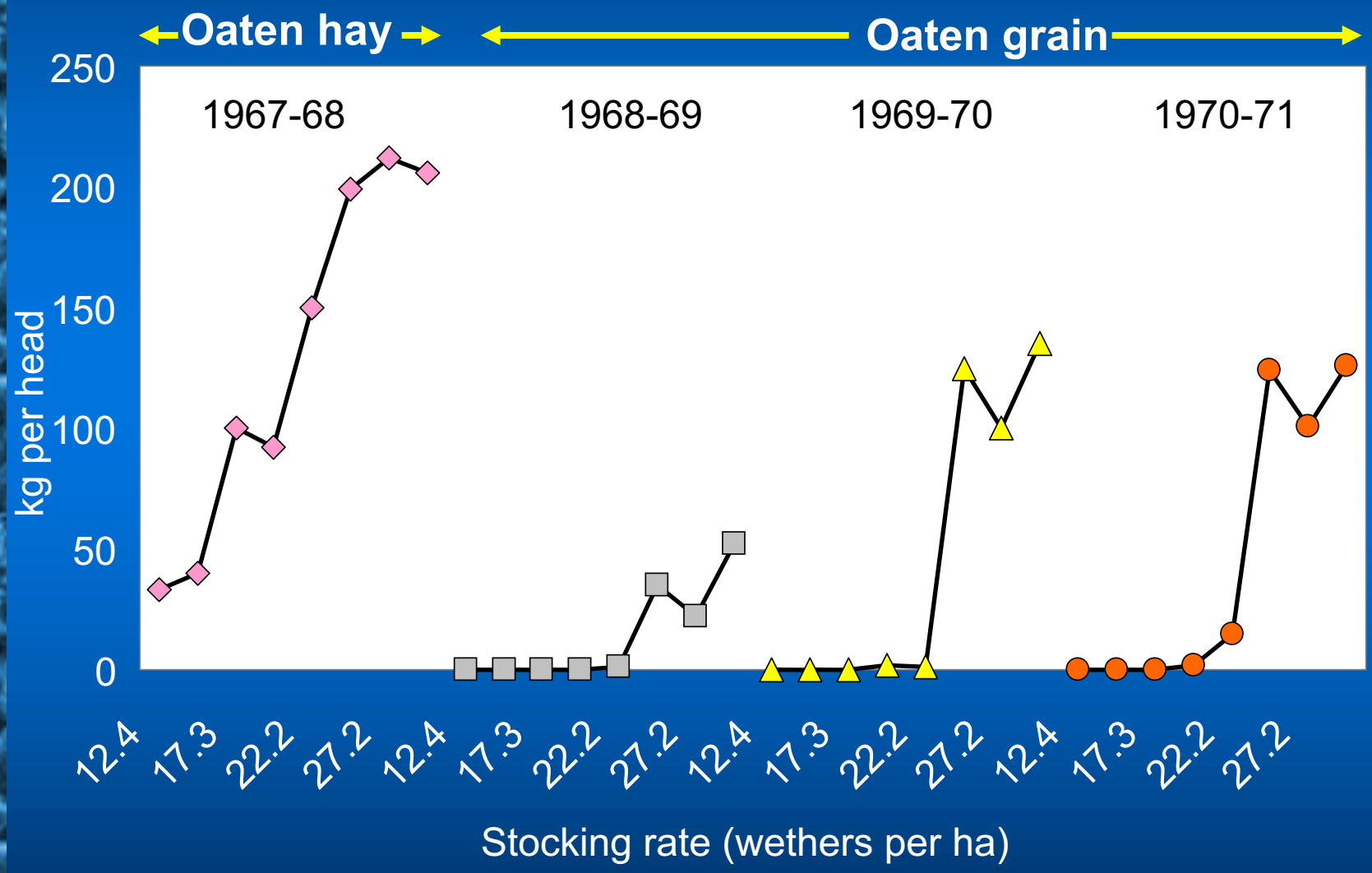
Source: Brown, T. (1976)

Hand feeding requirements vs stocking rate: Kybybolite, SA



Brad Crook
Source: Brown, T. (1976)

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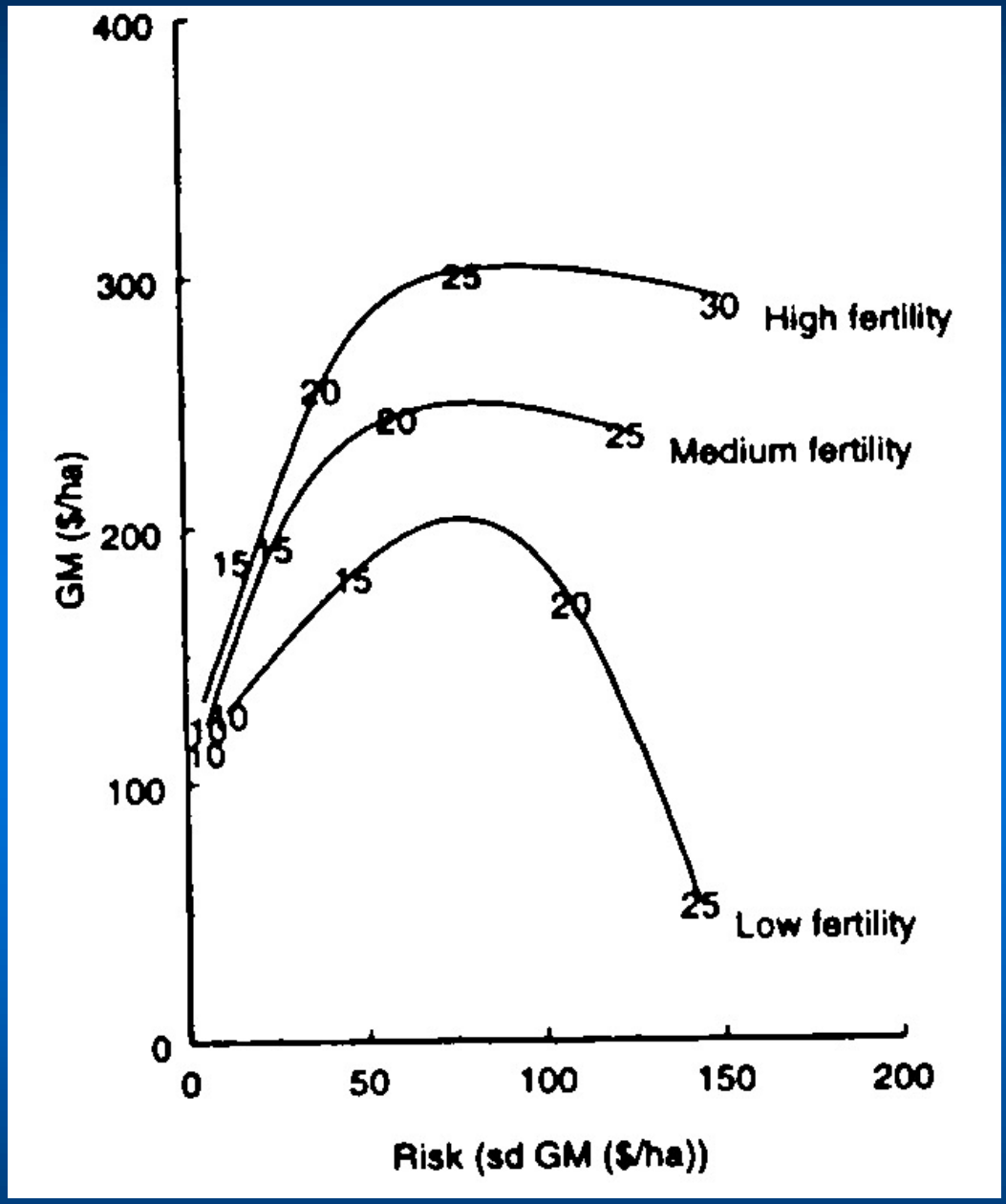
Gross margin (GM) for wool production vs variability in annual GM (sd GM) with stocking rate for low, medium and high soil fertility.



Brad Crook
Source: Donnelly et al. (1998)

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- "Annual pastures and set-stocking result in marked deterioration in the economic viability of wool producers, esp. with greater focus of the market on the quality of wool and meat products grown…...What is needed is more intensive management of the grazing of pastures, with dual aims of producing specified animal products and improving utilisation of dry matter produced from each grazed hectare."
  - Doyle, Grimm and Thompson (1994)

- **Challenge**: to define management tactics that can be used to accommodate the variability in pasture DM availability, quality and growth potential imposed each year. Need to consider:
  - requirements of pasture for growth and persistence
  - nutritional requirements of livestock to produce a specified product

→ optimal conditions for both may differ and thus compromise is needed

Strategies

- to alleviate the winter feed gap:
  - autumn deferment ★
  - strip grazing ★
  - hand-feeding
- to manage spring pasture productivity
  - intensive spring grazing ★
- to improve the quality of diet over summer
  - species to increase length of growing season or to produce higher quality residues:
    - long season annual legumes (e.g. Balansa clover)
    - perennial grasses
    - lucerne
    - tagasaste (fodder shrub)
  - crop stubbles; unharvested winter crops; hand-feeding

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