CRC for Premium Quality Wool

Management of Annual Pastures for Wool Production: Pasture Dynamics

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Brad Crook, The University of New England.

Annual Pastures for Wool Production

- annual pastures, associated with:
  - climatic regions, characterised by hot, dry summers and mild, wet winters:
    - not suitable for sustaining perennial pastures (in general)
    - Mediterranean climates (dominant influence in WA)
    - proportion of annuals decreases as rainfall increases and as proportion of summer rainfall increases
  - associated with the cropping zone, where crops and pastures used in rotation:
    - major use of pasture is for benefit of crop yields:
      - » disease breaks for subsequent crops
      - » soil fertility
    - pasture management may not be directed towards improving animal productivity, i.e. wool production may be of secondary importance

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Annual Pasture Species

Annual legumes:	
sown	Sub clover
naturalised	Medics
Annual grasses:	
sown	Annual ryegrass
volunteer	Barley grass, Brome grass, Vulpia spp.
Broadleaf species	Erodium, Capeweed, Brassicas, Rolypoly, vines

References: Wilson and Simpson (1994); Doyle et al. (1994)

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Surveys of pasture composition in annual crop zone pastures

Location	Major findings
Northern NSW (marginal cropping zone)	often no replanting of pastures main annual species (e.g. barley grass) with poor carrying capacity over summer
North W. Victoria	50% of area could be classified as "unimproved" based on low annual medic content 60% annual grasses: barley grass, brome grass, annual ryegrass and vulpia 10% annual legume
Adelaide Plains, SA	33% annual legumes and 29% annual grasses with high rainfall pastures considered poor, with bare ground cover of 27% and low medic content
South W. WA	less than 20% legume high proportion of capeweed (38%)

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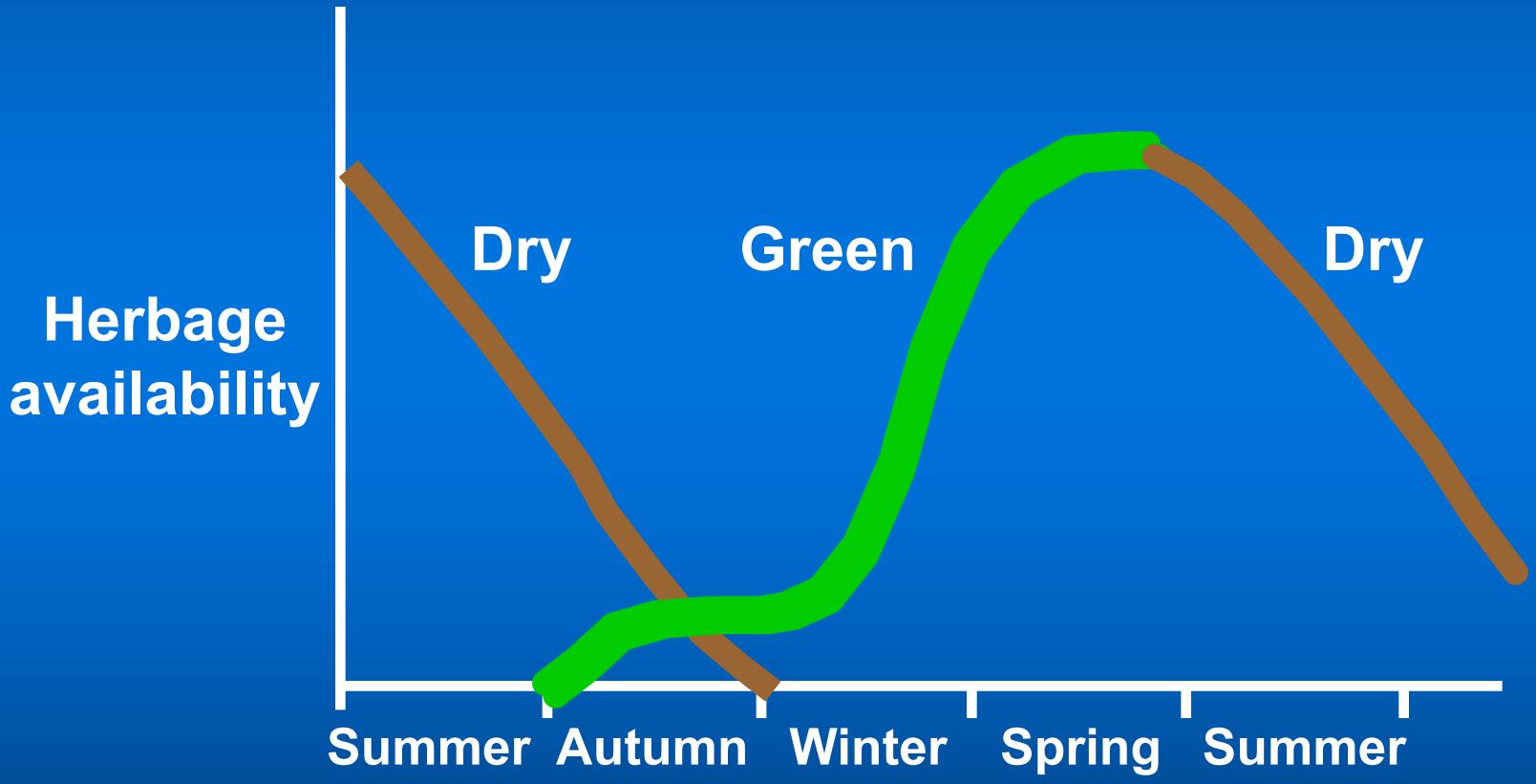
Source: Wilson and Simpson (1994)

Seasonal pattern of pasture availability for grazed pastures in a Mediterranean environment



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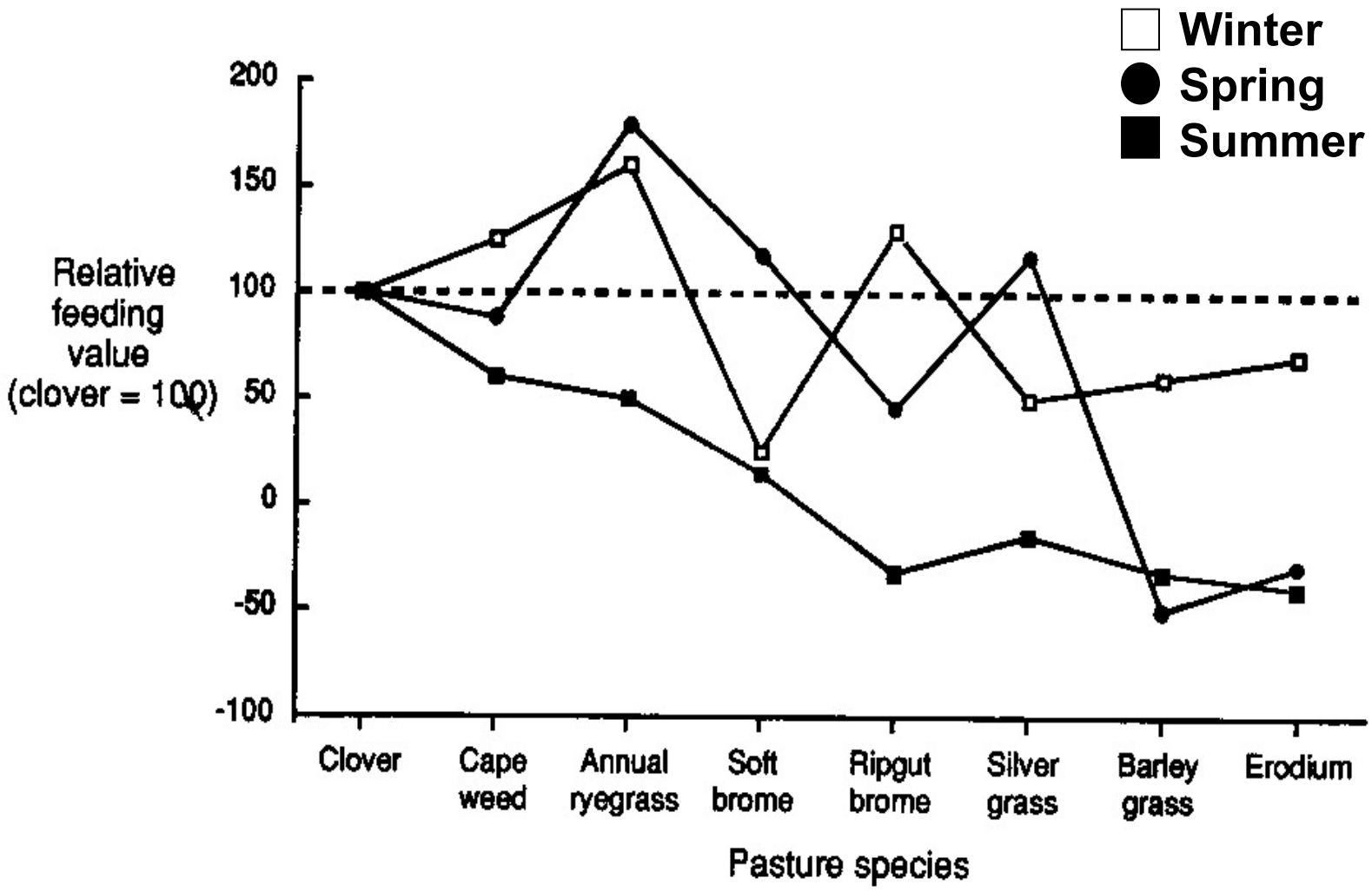
Source: Allden (1980)

Feeding values of various annual pasture plants relative to sub clover



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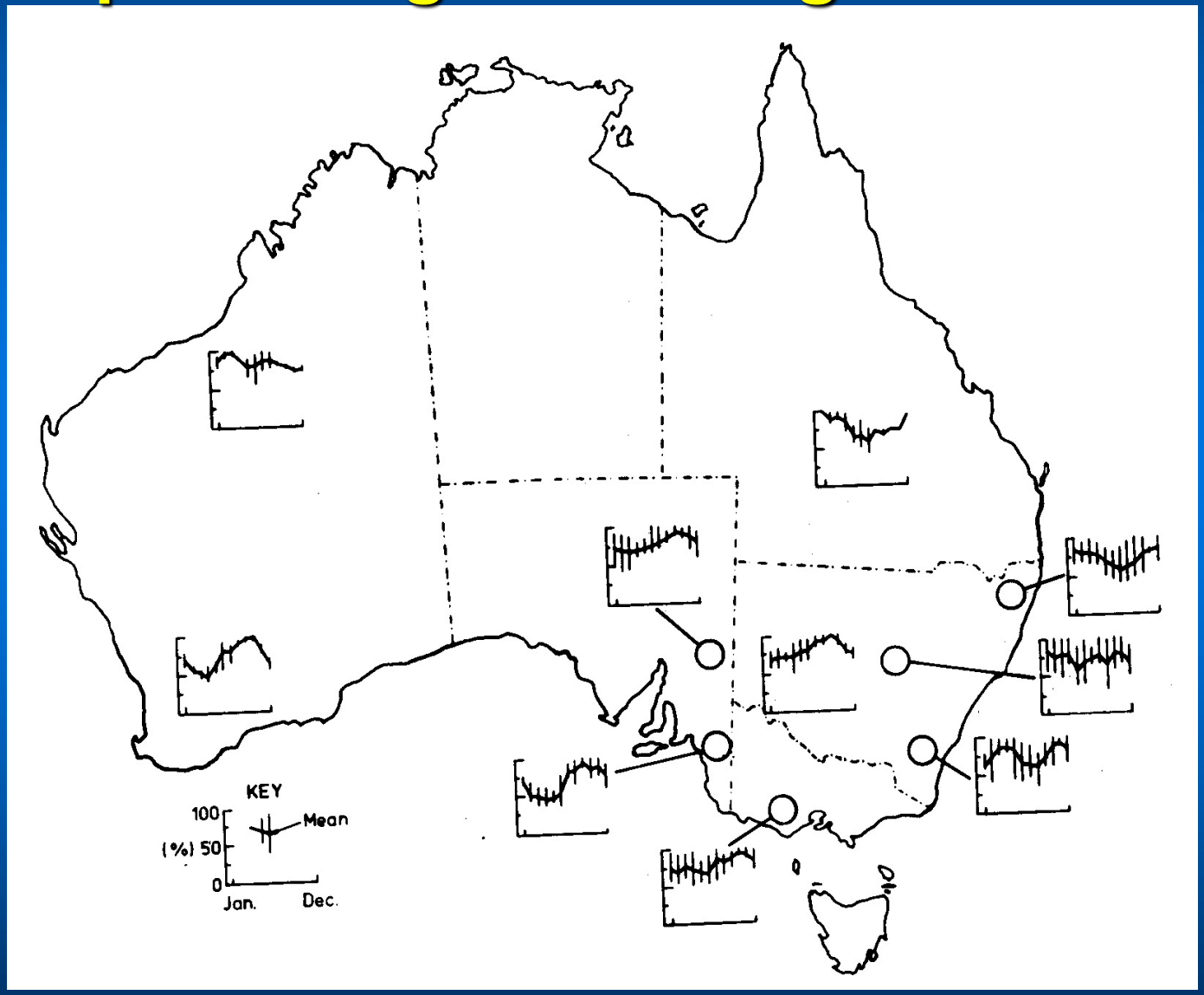
Source: Doyle et al. (1994)

Monthly wool growth rate expressed as a percentage of the highest value



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Source: Robards (1979)

Within-year amplitude of clean wool growth rate

State	Location	Amplitude (%)	Measures per year
WA	Kojonup	70	7
	Mt. Barker	26	4
	Bakers Hill	100	12
	Northam	146	12
SA	Kybybolite	69	12
		142	12
	Roseworthy	229	6
	Turretfield	60	12
Vic	Werribee	114	12
		125	10
NSW	Wagga Wagga	49	5
	Cowra	90	7

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Source: Robards (1979)

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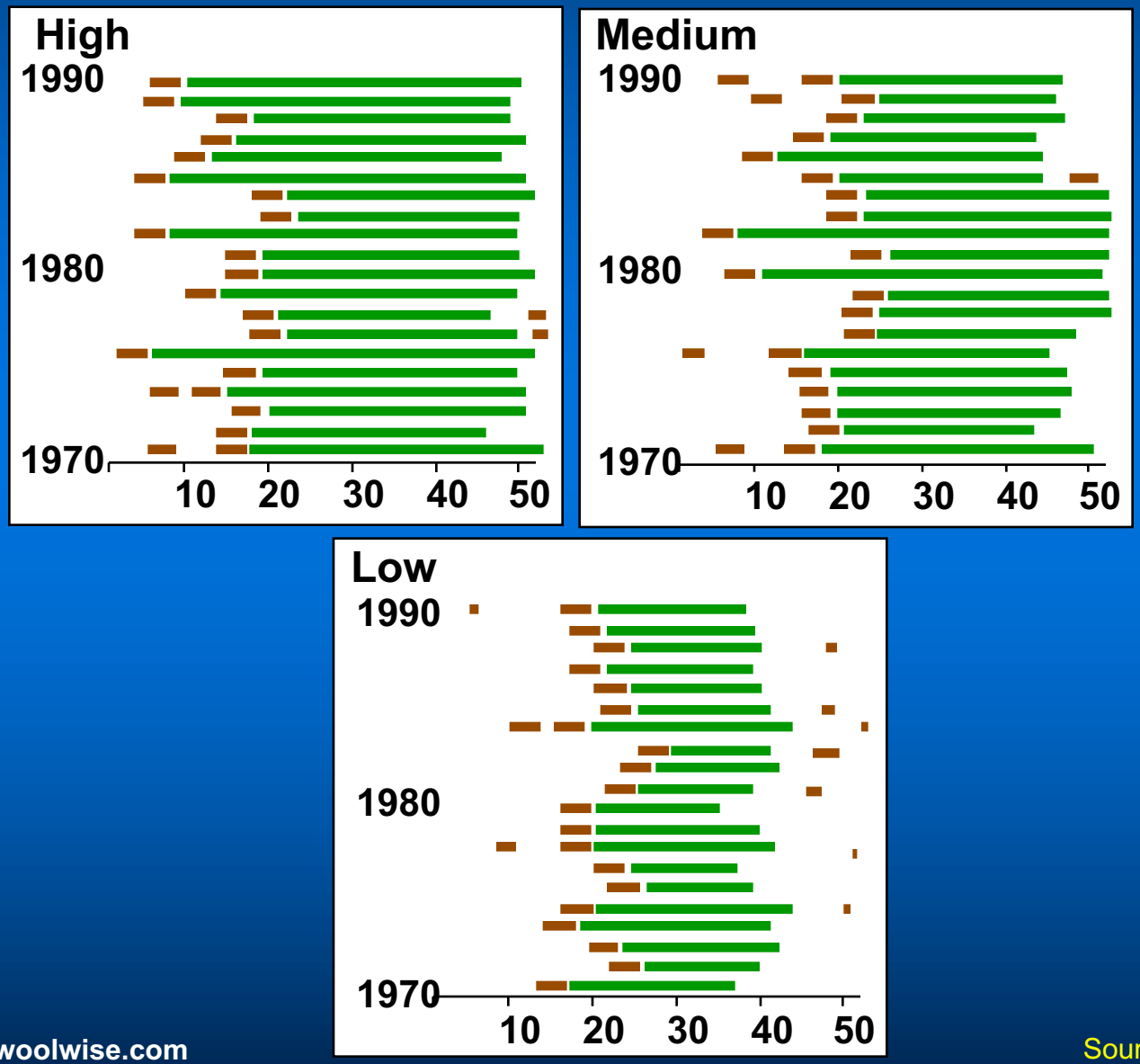
Variability in pasture growth between years



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Source: Cornish (1985)

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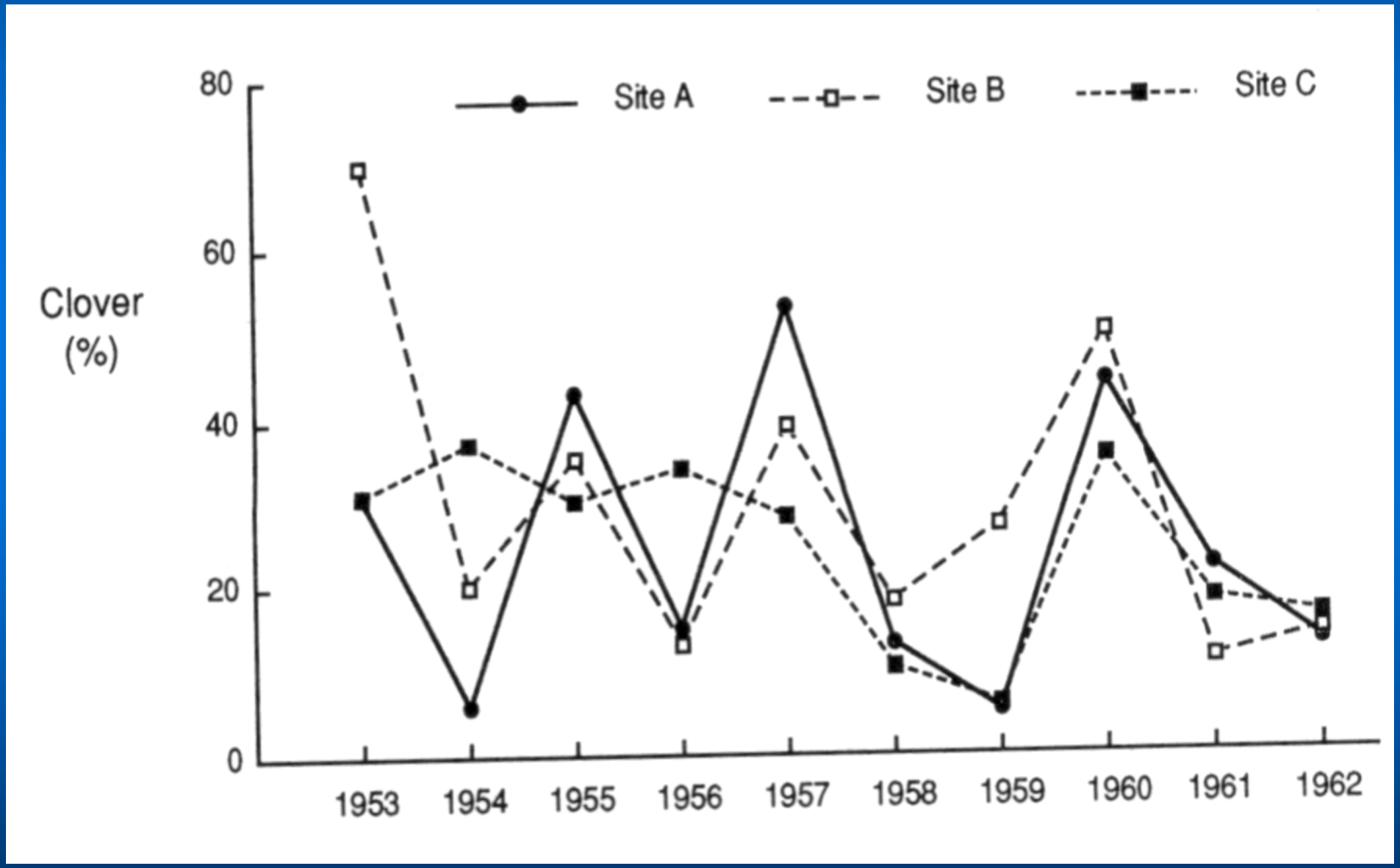
Between-year variation in sub clover content in pastures at 3 sites at Kojonup.

Each value is the mean of 3 within-year estimates based on dry weight. All sites set-stocked at 5 wethers/ha



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Source: Doyle et al. (1994)