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Management of Annual Pastures for Wool Production: Intensive Spring Grazing

Produced for the CRC for Premium Quality Wool undergraduate program by;
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Green Feed on Offer (FOO)

- FOO (kg DM per ha) is an indicator of the balance between pasture growth rate and rate at which it is consumed by stock:
 - growth > removal: FOO increases
 - growth = removal: FOO maintained
 - growth < removal: FOO declines
- FOO vs. production targets, example:
 - control wool growth: FOO 1000-1500
 - maximise liveweight gain: FOO > 2500
 - maximise legume seed set: FOO > 3500
- FOO relationships less reliable from flowering onwards

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Intensive Spring Grazing and Wool Production

- **Mount Barker, WA:**
 - approx. 700 mm annual rainfall
 - pastures: sub clover, annual ryegrass, capeweed
- **experimental design:**
 - all plots grazed by non-experimental sheep in winter
 - spring grazing: started FOO=1500, finished FOO=1000 (some plots)
 - all sheep grazed together (except in spring) and shorn Feb/March
 - young + adult wethers grazed to maintain spring FOO at 800 to 2800 kg DM per hectare

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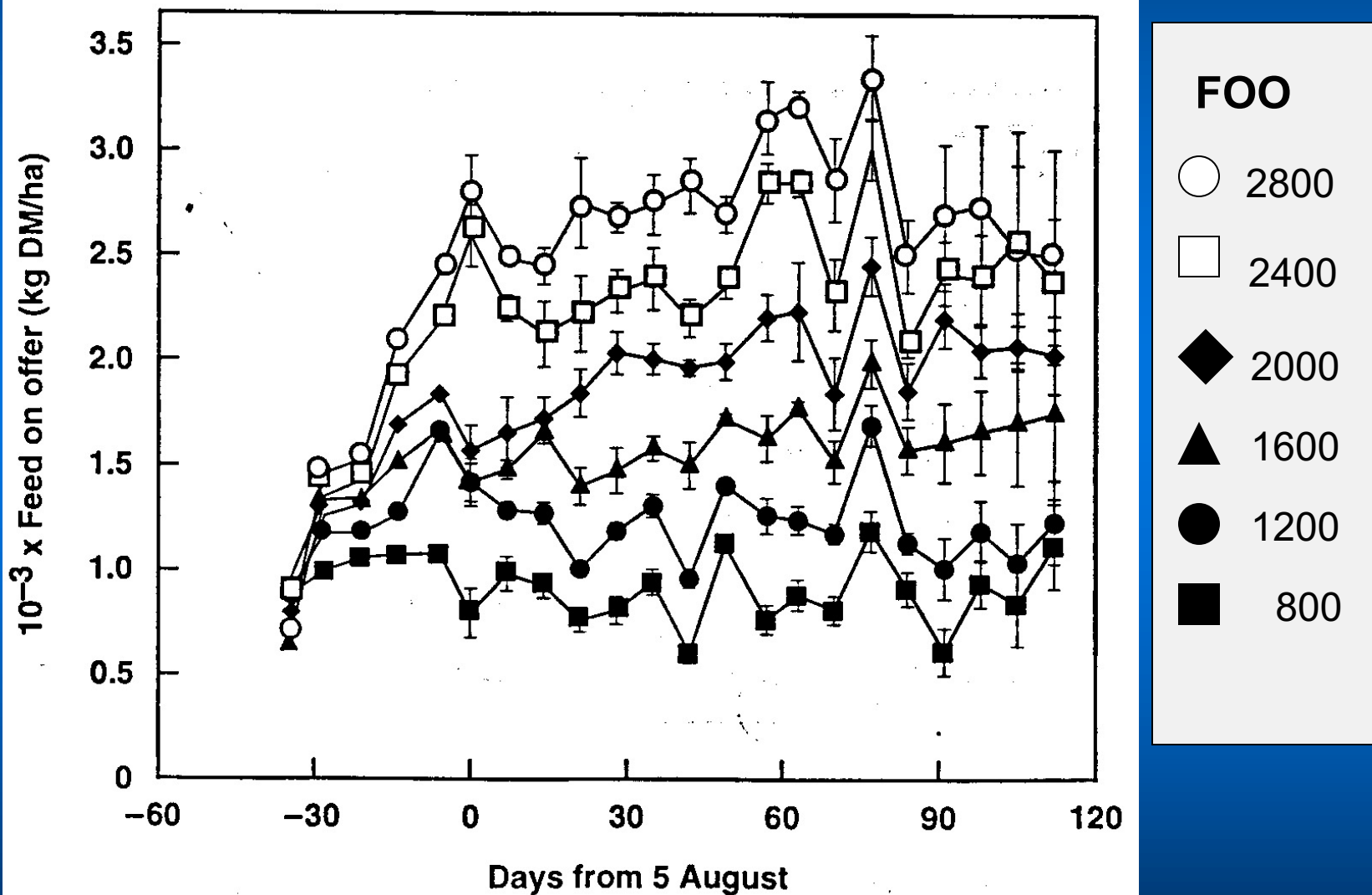
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Green feed on offer in spring under different FOO targets



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Source: Thompson et al. (1997)

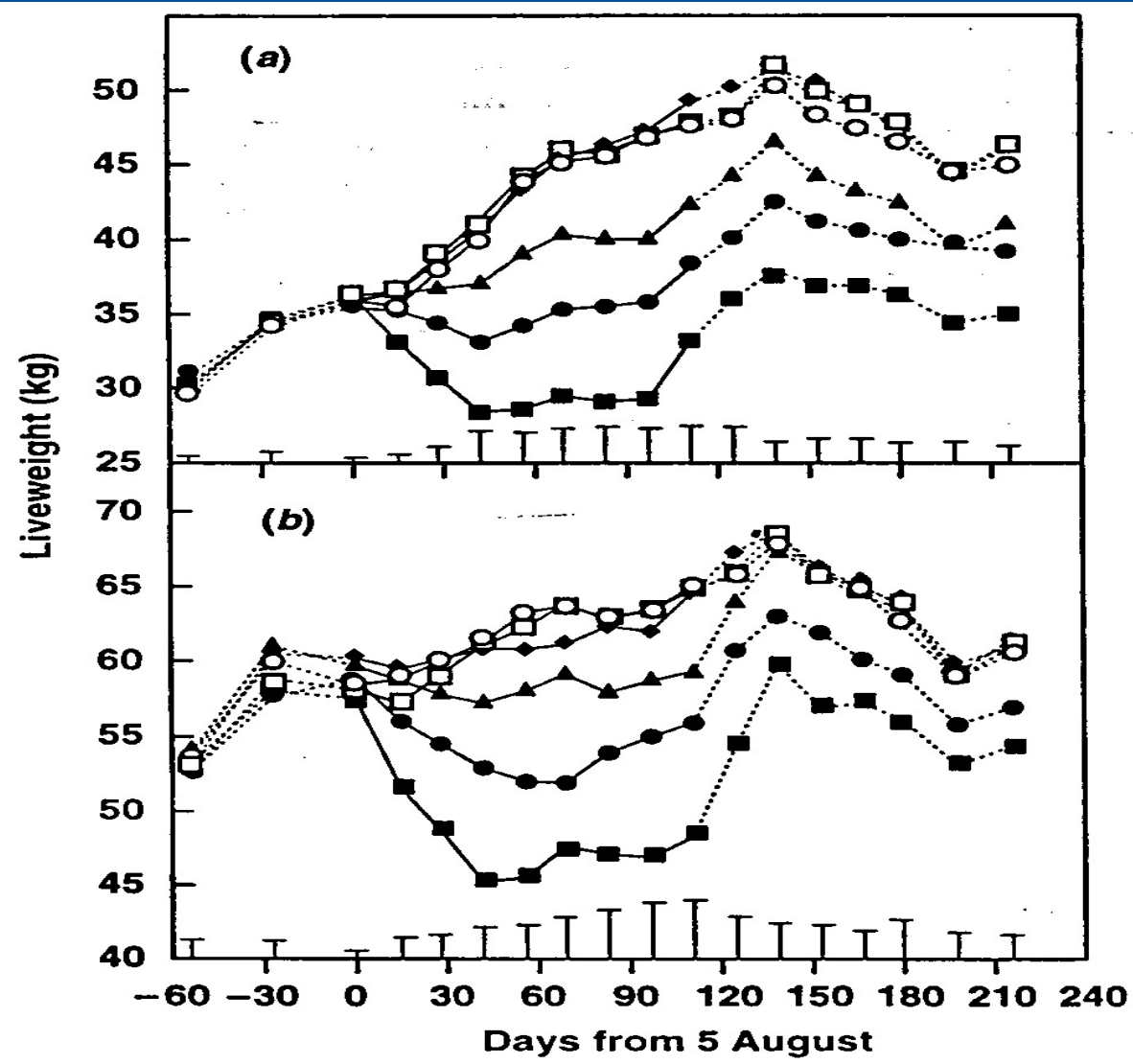


Live weights of (a) hogget and (b) mature wethers grazing at different FOO in spring

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FOO

- 2800
- 2400
- ◆ 2000
- ▲ 1600
- 1200
- 800



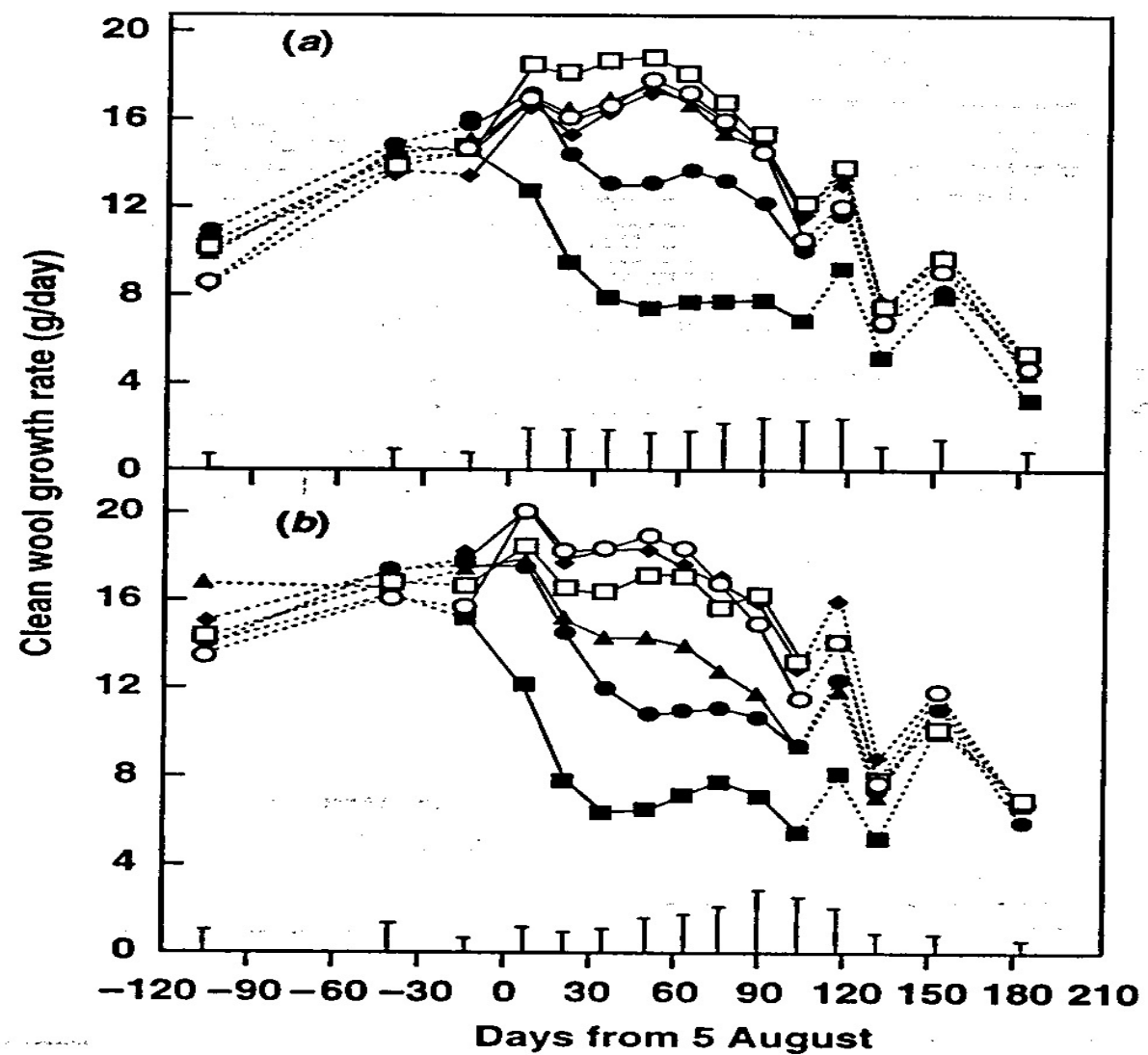


Wool growth rate of (a) hogget and (b) mature wethers grazing at different FOO in spring

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FOO

- 2800
- 2400
- ◆ 2000
- ▲ 1600
- 1200
- 800



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Source: Thompson et al. (1997)

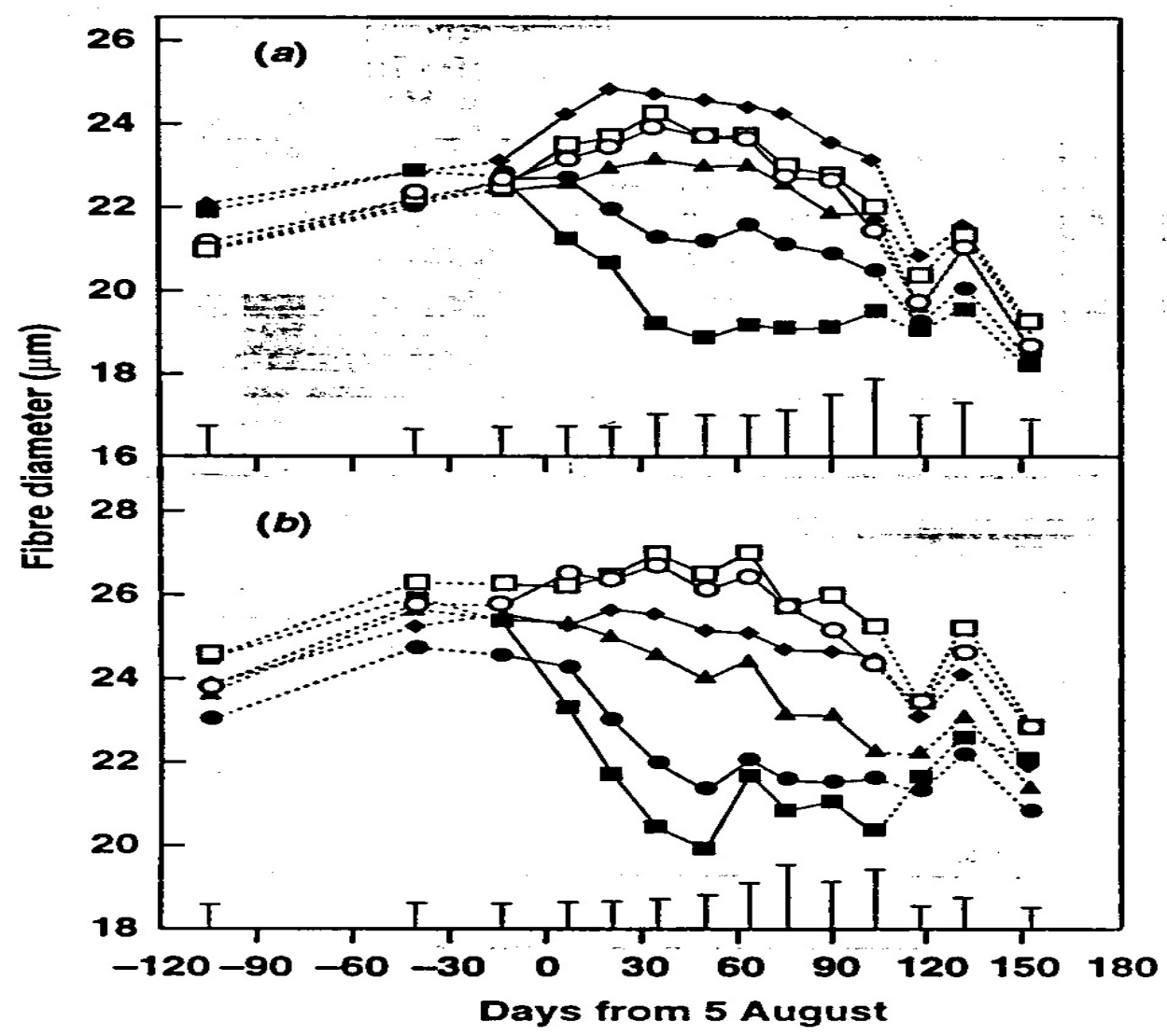


Fibre diameter of (a) hogget and (b) mature wethers grazing at different FOO in spring

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FOO

- 2800
- 2400
- ◆ 2000
- ▲ 1600
- 1200
- 800





Annual wool production and quality attributes for adult wethers grazed at different FOO levels during spring

	FOO (kg DM per ha)				
	900	1200	1600	2000	2400
Clean wool per head	4.20	4.51	5.14	5.38	5.20
Fibre diameter	23.4	23.1	24.2	24.1	25.3
CVFD	21.8	20.4	19.2	19.5	18.4
Staple length	92	97	94	99	98
Staple strength	32	41	47	47	50
POB	75	65	61	47	52
Clean wool per ha	35.7	55.3	46.6	61.0	55.6

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Source: Thompson et al. (1997); Doyle and Thompson (1992)



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Conclusions

- liveweight change, wool growth rate and fibre diameter can be manipulated via intensive spring grazing:
 - most applicable to wools < 22 microns and in environments with long periods of excess green feed (medium-high rainfall areas)
 - relationship between FOO and performance will depend on:
 - physiological condition: age, condition score, genotype
 - growth patterns of pasture, esp. early vs. late spring
 - but need to consider lower condition score and liveweight of sheep going into summer-autumn after low FOO grazing
- pastures:
 - pasture growth rates not decreased if FOO > 1000
 - with favourable late rains, pastures matured later at high stocking rates, so prolonged availability of green pasture (what if early finish to season?)
 - grazing to low FOO decreases legume and grass seed production, so pasture composition in following year could be markedly different
 - management of “undergrazed” pastures