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# Why are young sheep more prone to seasonal changes in nutrition?

Produced for the CRC for Premium Quality Wool undergraduate program by;  
Dr. Stephen Gherardi & Andrew Peterson, Agriculture Western Australia.



# Nutritional value Mediterranean pastures

- **Winter** - green feed, quality high, quantity limiting
- **Spring** - green feed, quality high, quantity non-limiting
- **Summer** - dry feed, quality low, quantity non-limiting
- **Autumn** - dry feed, quality low, quantity limiting

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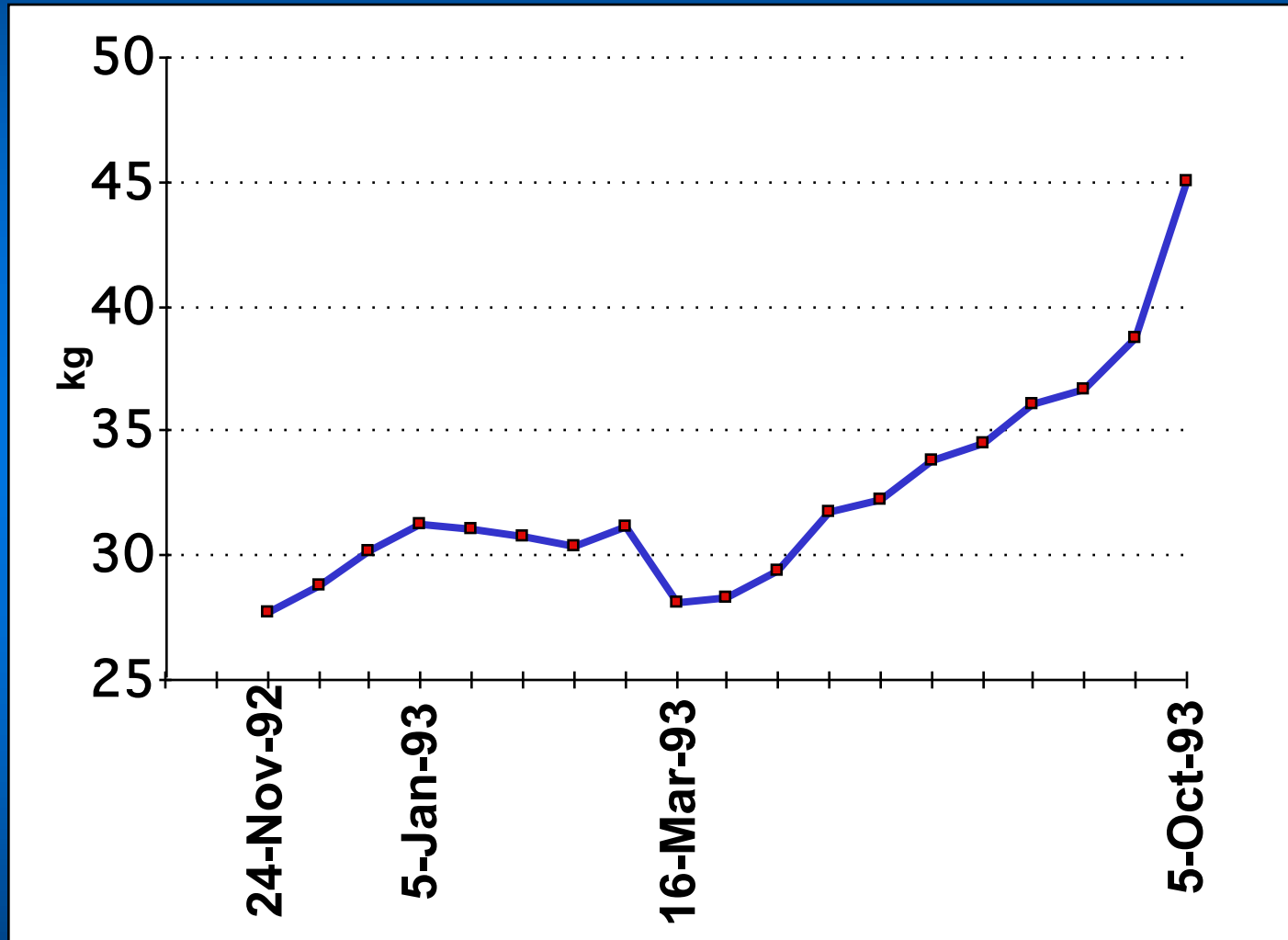
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# Variation in liveweight for young sheep Kojonup, WA



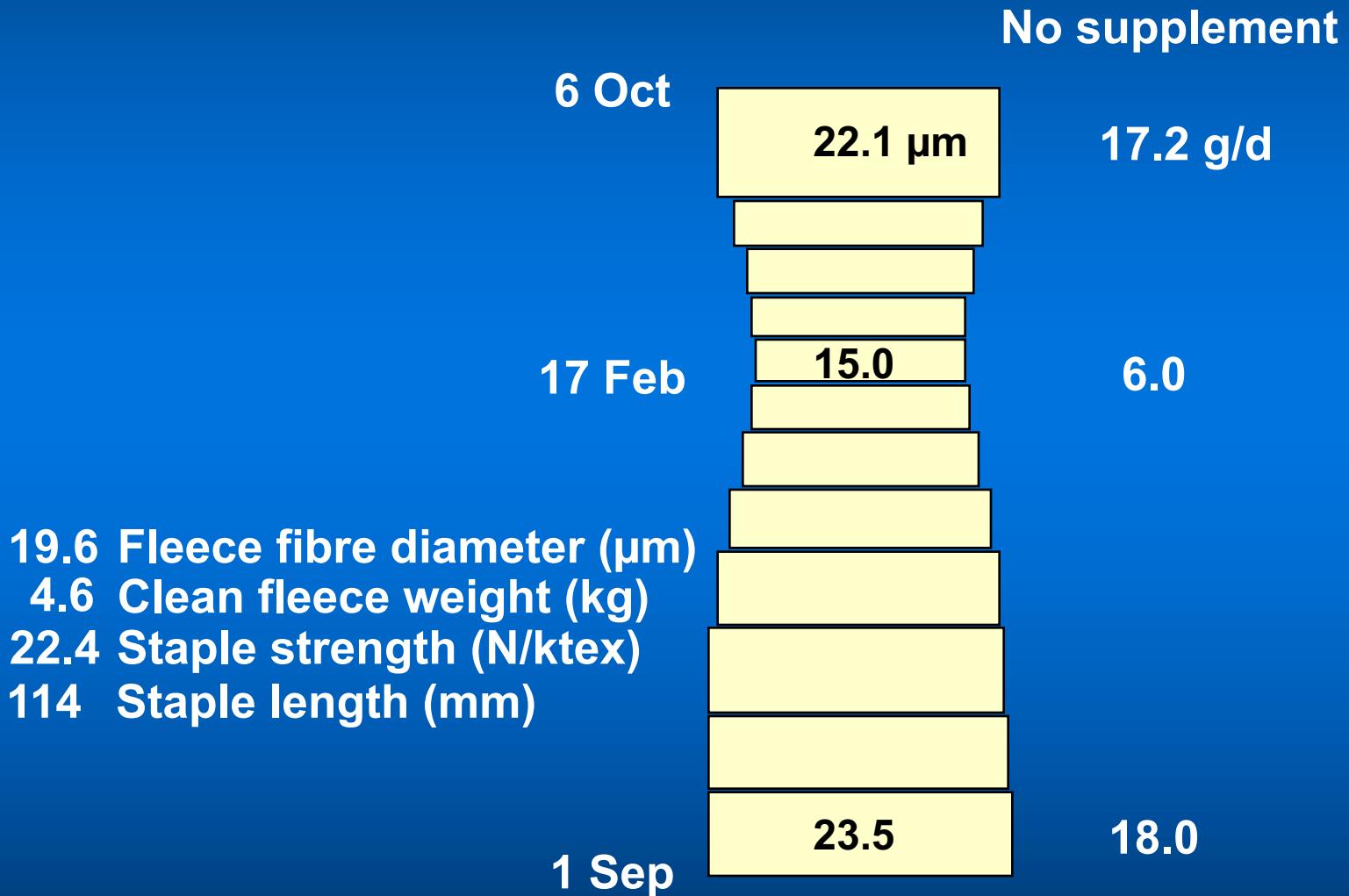
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Stephen Gherardi & Andrew Peterson  
Source: Gherardi et al. (unpubl.)



# Variation in wool growth and fibre diameter for young sheep, Kojonup, WA

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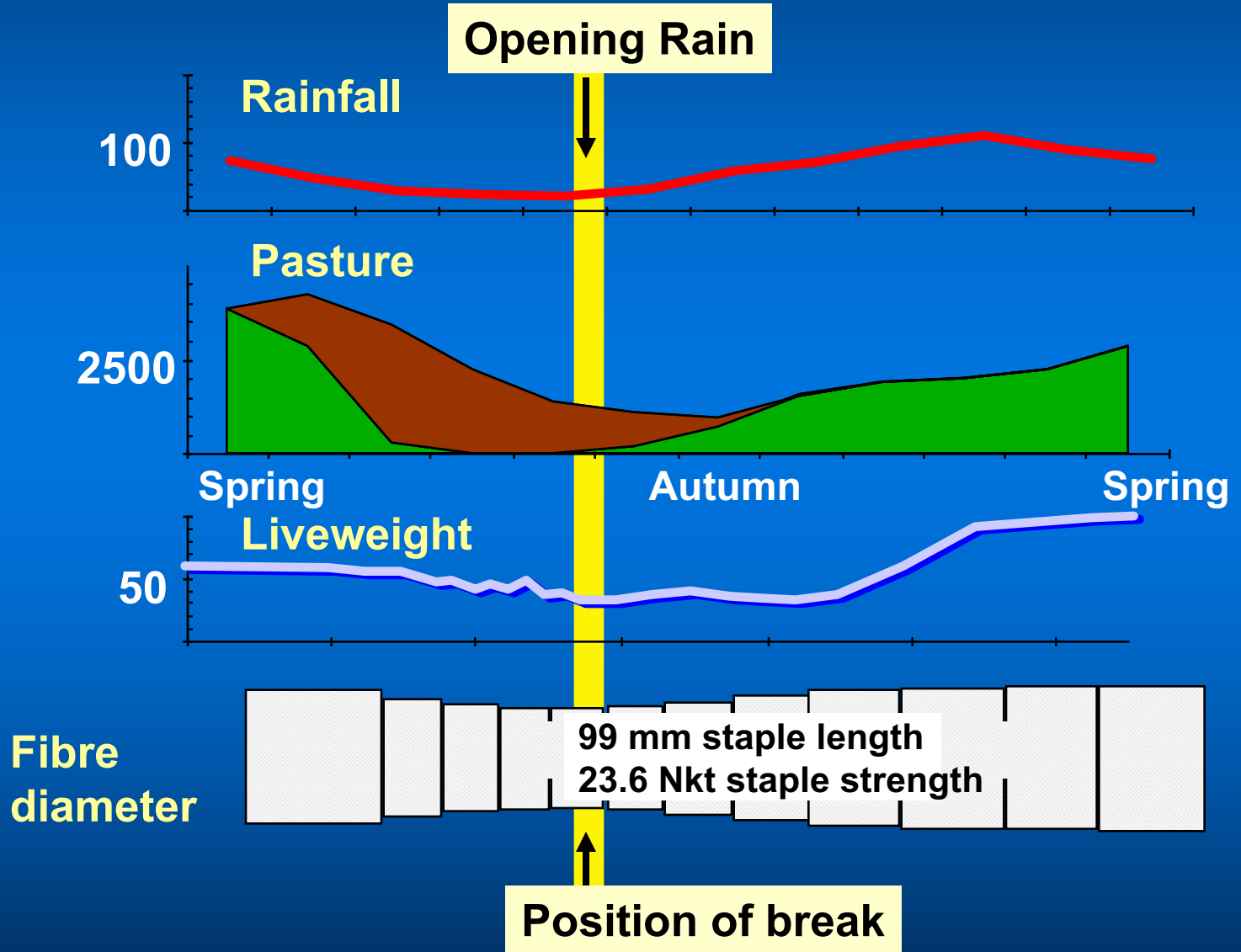


Stephen Gherardi & Andrew Peterson  
Source: Gherardi et al. (unpubl.)



# Changes in rainfall, pasture, liveweight, wool growth and fibre diameter

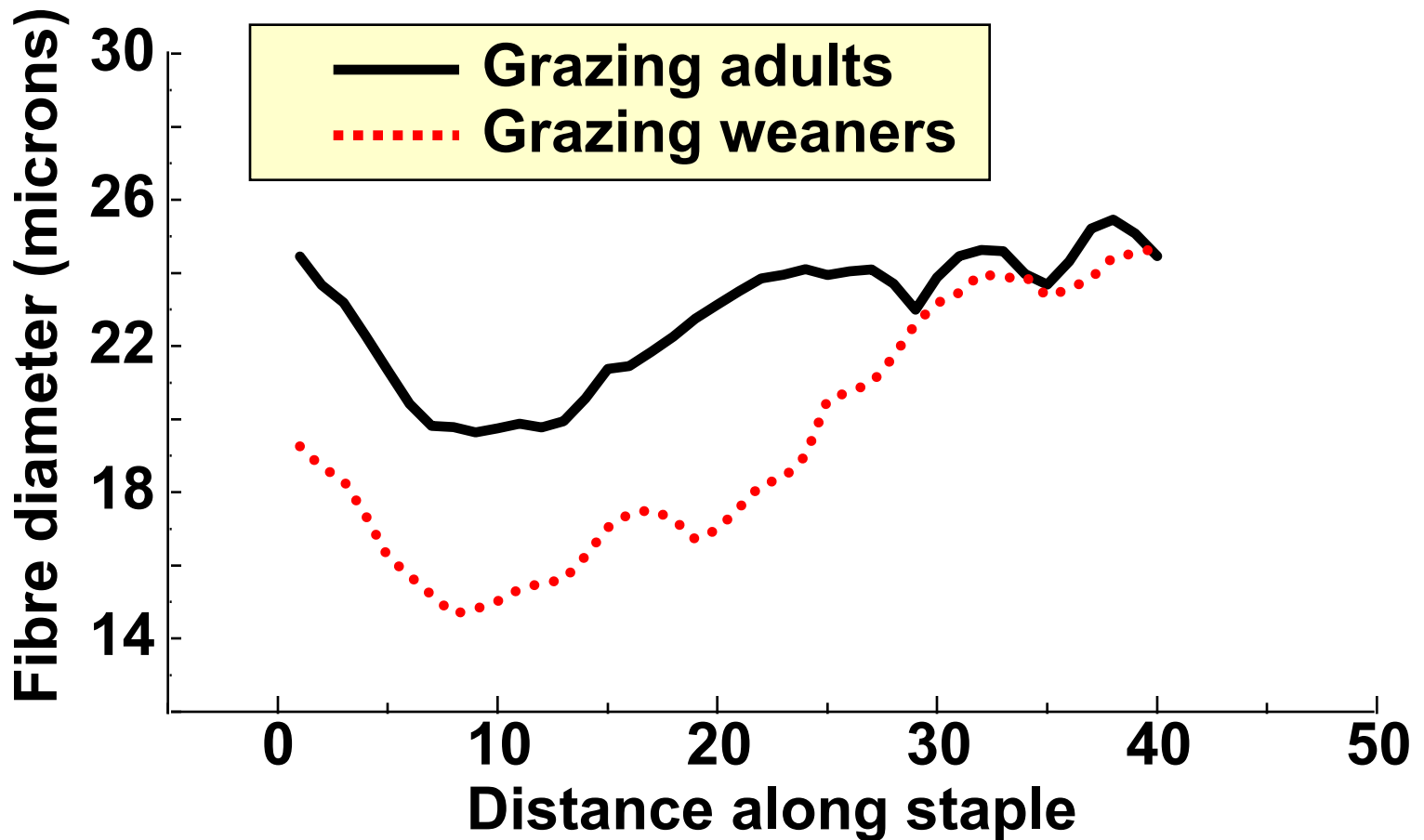
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# Fibre diameter variation in adults and weaners



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Source: A.D. Peterson, pers. comm.



# Why are young sheep more prone to seasonal changes in nutrition?

- higher nutritional demands for body growth
- lower ability to buffer during nutritional stress

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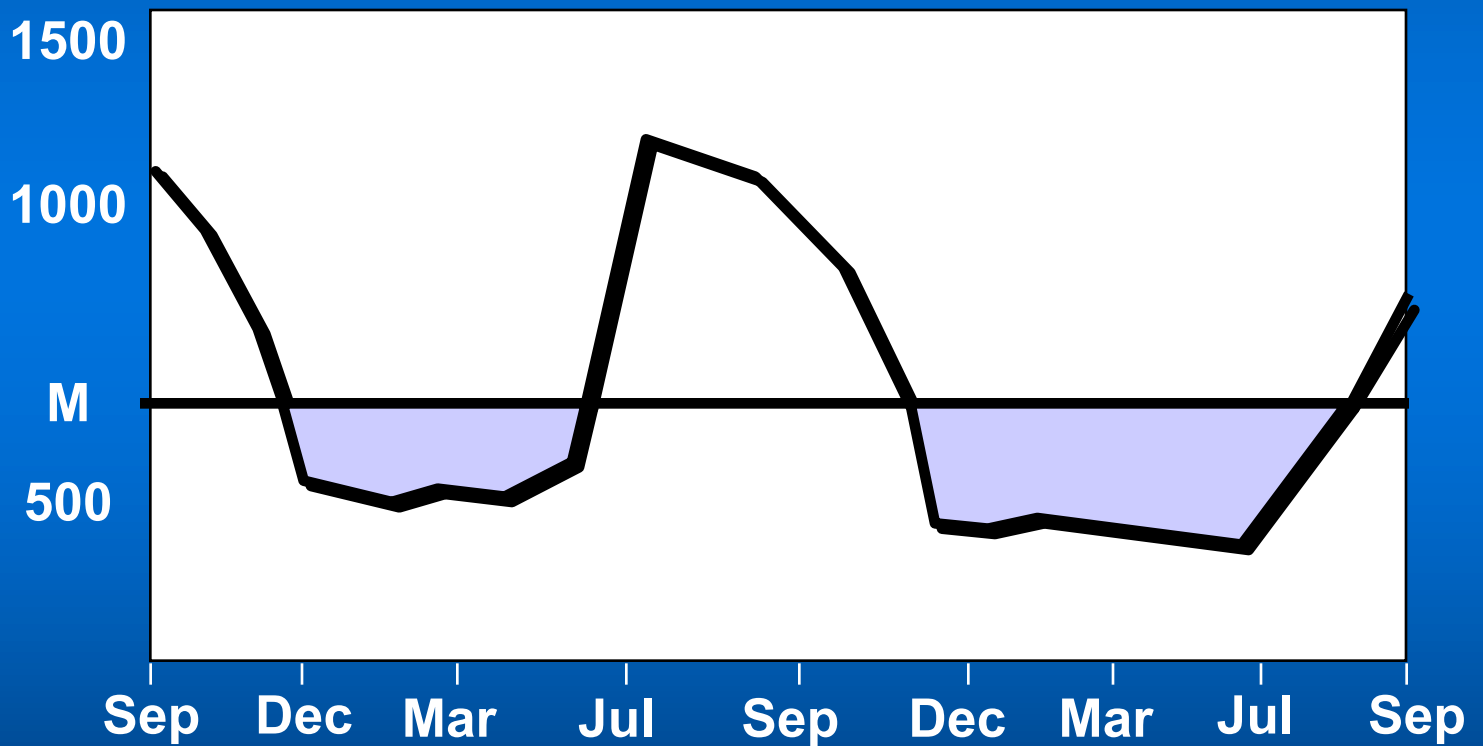
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# Daily intake of DE relative to maintenance for sheep grazing pasture

Daily intake of D.E.  
KJ/kg MLW

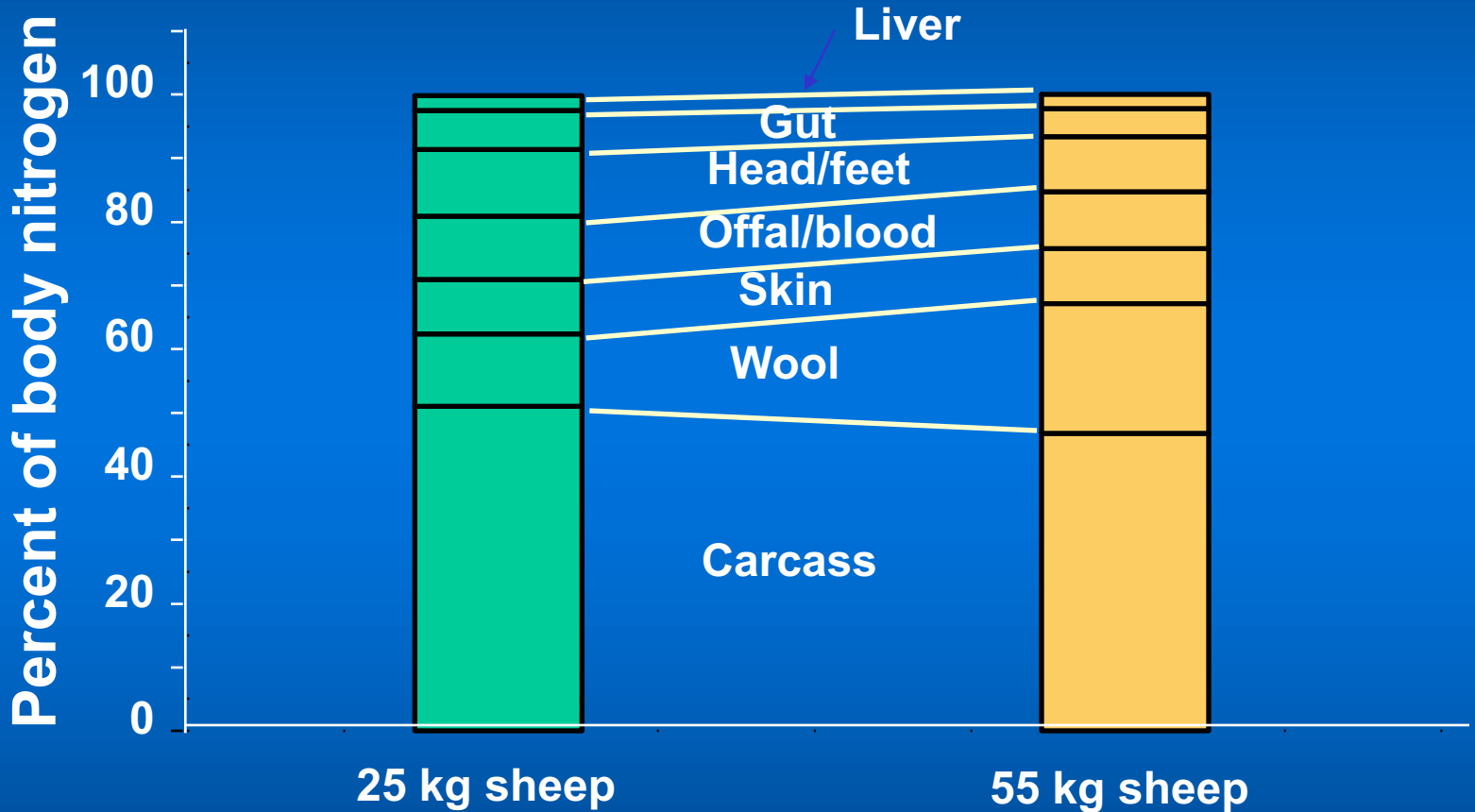


Stephen Gherardi & Andrew Peterson  
Source: Alden (1980)





# Accretion of protein in sheep



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Source: Macrae et al. (1993)



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# Summary

- Inability to respond and buffer against seasonal variation
- Seasonal changes in nutrition accompanied by changes in liveweight, wool growth and fibre diameter
- Supplementary feeding can increase wool growth with little effect on annual wool production and fibre diameter
- Liveweight at the start of summer determines what diameter weaners will be going into summer
- Shearing near the point of break will reduce the proportion of mid staple breaks and increase the Hauteur