

SHEEP CONFINEMENT & DROUGHT FEEDING WORKSHOP & FARM WALK



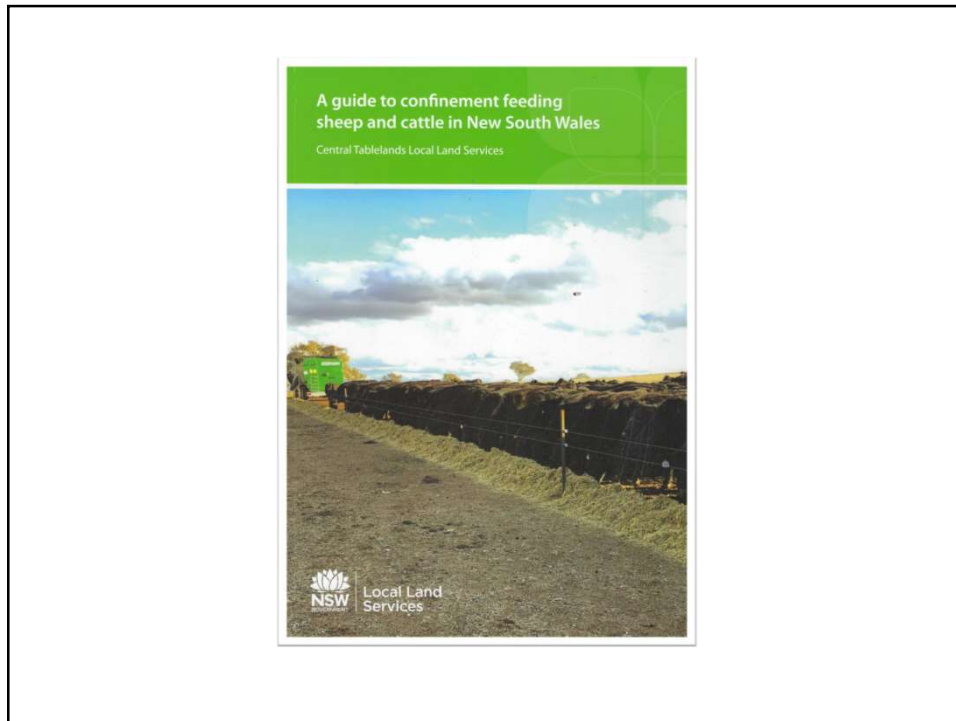
The SQNSW Innovation Hub receives funding from the Australian Government's Future Drought Fund. The Farm Business Resilience Program is jointly funded through the Australian Government's Future Drought Fund and NSW Department of Primary Industries.

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Today's Program

- Introduction
- Nutrition - meeting feed needs
- Smoko
- DPI Drought Calculator
- Animal Health
- Droughtlot Regulations
- Lunch
- Pen design, infrastructure, shade, social stress, water
- Feedlot site visit
- Evaluation & wrap up

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What is “Confinement” Feeding ?

- Confinement feeding can be defined as the ***“full hand feeding and management of stock in small paddocks or pens”***
- Known also as sacrifice paddocks, drought-lots or stock containment areas, confinement feeding typically occurs during drought or periods of poor to low feed quantity or quality.



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What is “Confinement” Feeding ?

- The primary objectives of confinement feeding are to
- maintain flock or herd productivity,
- reduce grazing pressure and
- maintain a minimal pasture base across the property.



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Pro's of Confinement Feeding:

- **Reduce**
 - Stocking rates = preserve topsoil, groundcover and nutrients
 - Livestock energy needs (save 10-15% of daily ME req)
- **Maintain/Improve**
 - core breeder base
 - perennial pastures
 - pasture response rates after rain
 - bodyweight/condition



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Pro's:

- **Maintain/Improve**
 - Weaner/adult growth rates or FCE
 - Conception rates
 - Dam and lamb/calf survival
 - Wool quality
- **Meet market specifications**
- **Cashflow**
- **Value add**
- **Animal Welfare**



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Con's:

- **Costly**
 - Full production ration
 - Infrastructure costs
- **Potential Health Issues** including:
 - grain poisoning, ammonia toxicity, pulpy kidney, pink eye,
 - salmonella, coccidiosis,
 - hypocalcaemia, hypomagnesaemia and pregnancy toxaemia
- **Water** quality and supply critical



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Improving Efficiencies within the Sheep Industry

- Focus on **ewe efficiency**
 - $\frac{2}{3}$'s of a ewes annual feed needs goes towards maintaining her
 - $\frac{1}{3}$ of ewes are responsible for $\frac{2}{3}$'s of lamb losses – identify ewes and cull
 - ~ 80pc of weaner mortalities occur in the bottom 20pc of lambs - identifying these early and focusing on meeting market targets soon recoup the cost of scales !!

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Ewe Efficiency

In terms of efficiency based on mature ewe live weight recommended targets are:

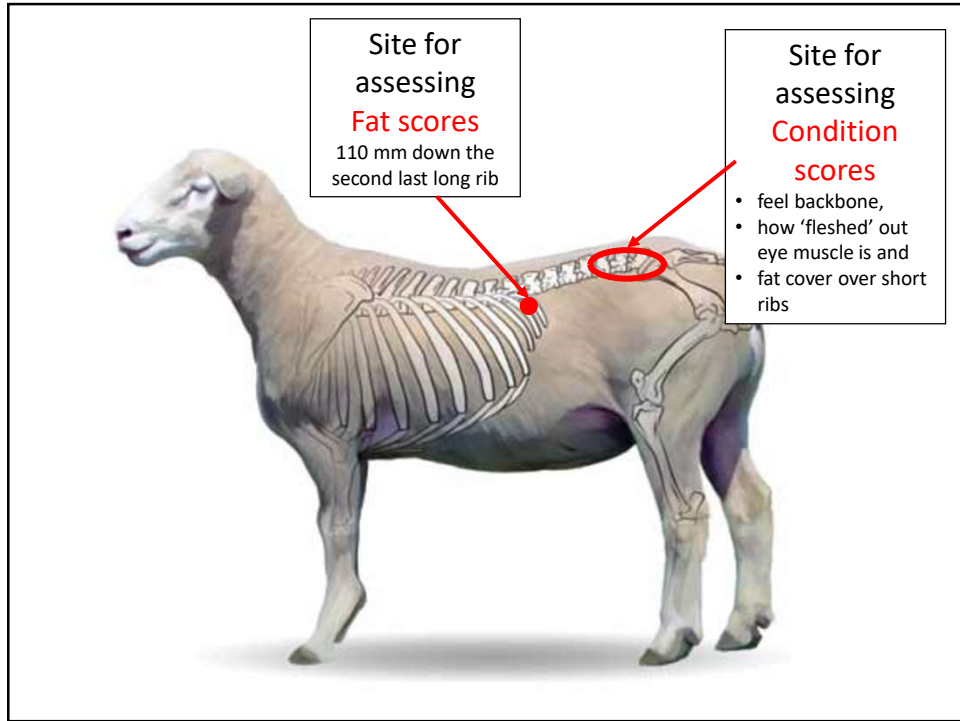
		55kg	65kg	75kg
Birth weights	7%	3.9kg	4.5kg	5.2kg
Weaning weights	45%	25kg	29 kg	34 kg
Joining Weight	75%	42kg	49 kg	56 kg

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Feed Needs

- Ultimately production is nutrition driven
- Conception and survival post weaning are heavily dependent on
 - ewe body condition and
 - meeting feed requirements (of ewes, the foetus and live lambs)

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Class of sheep	Minimum condition score	Target condition score
Dry ewe at joining	2.5	3
Pregnancy	2.5	3
Lactation	2	2.5 to 3
End of growing season	3	3.5+
Wethers (minimum feed supply)	2- (winter)	2+
Rams at mating	3	3.5 to 4
Weaners (wool)	Better to weigh, but generally >2.5	
Lambs (meat)	Assess growth targets to meet market specifications	

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A balanced ration must provide:

- Energy
- Protein
- Roughage
- Vitamins and
- Minerals

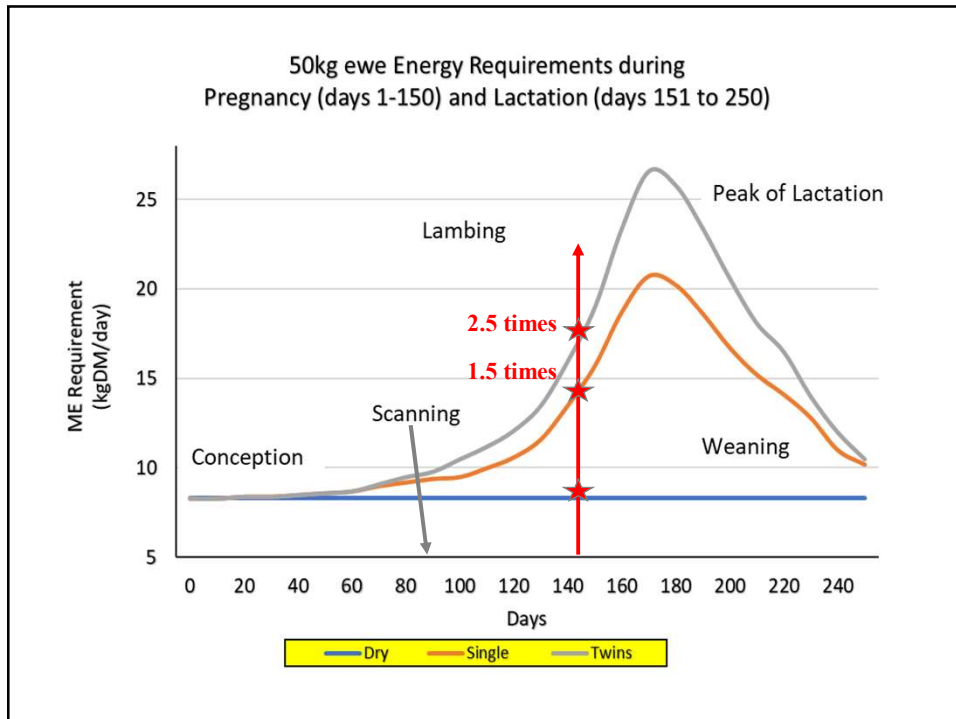


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Minimum energy and protein requirements (50kg/1 DSE)

Production State	Metabolisable Energy (ME) MJ/kg	Crude Protein CP %
Survival	8	7
Lactation and late pregnancy	12+	12+
Growth	10+	12+

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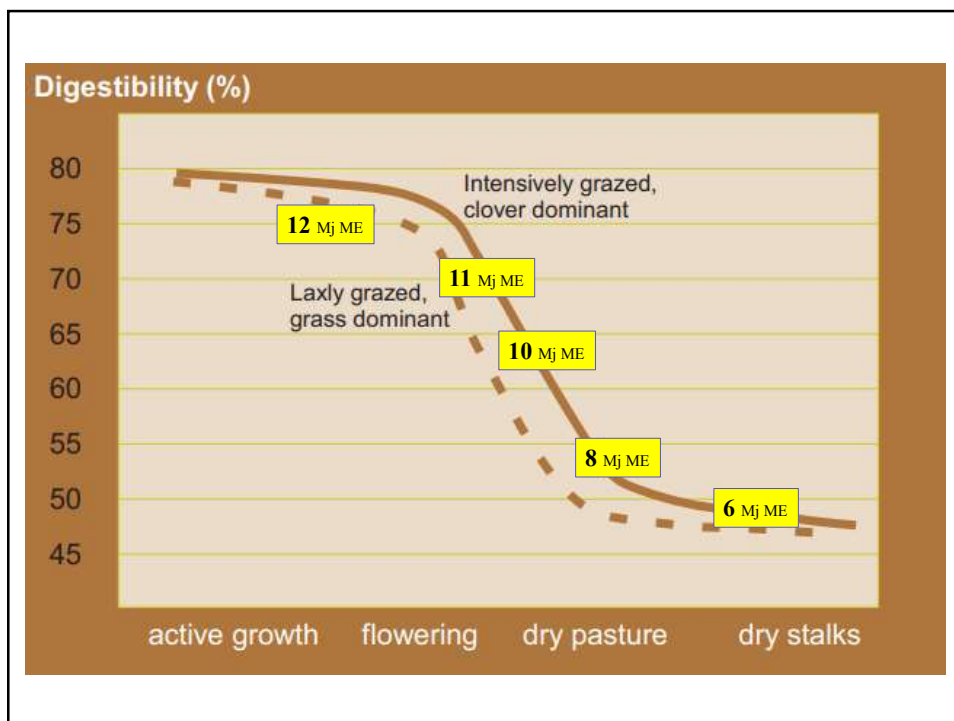
Metabolisable Energy (ME)

- Most important indicator of feed quality
- Energy in feed is used for
 - muscle development,
 - fat storage,
 - maintenance and
 - growth
- Measured in megajoules of energy per kg of feed dry matter (MJ ME/kg DM)

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Energy

Provided through the metabolism of carbohydrates, protein, sugars & oils

Cereal grains are a rich and easily digested energy form

Cereals are usually cheaper per unit of energy than pulses

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Energy

Relative energy value:

Carbohydrates	15-18 Mj/kg DM
Protein	22-24
Oil	36-40

Excess protein can be used.
Oil is a rich energy form but there are limitations.

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Protein is needed for:

- muscle development,
- appetite and
- wool production

Pulses are usually cheaper per unit of protein than cereal grains

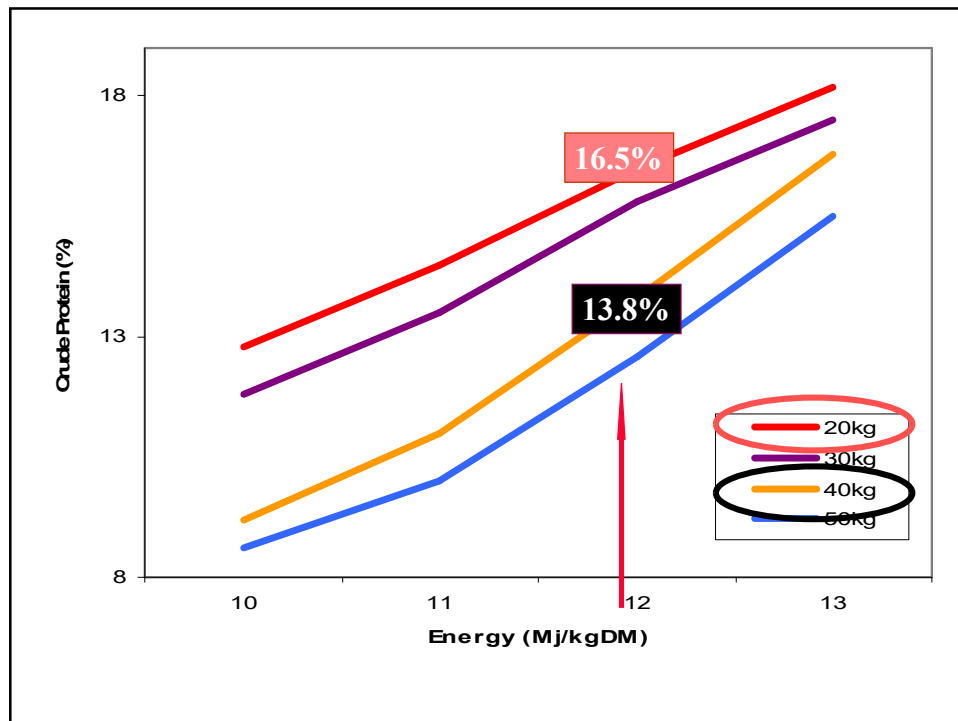
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Inadequate protein

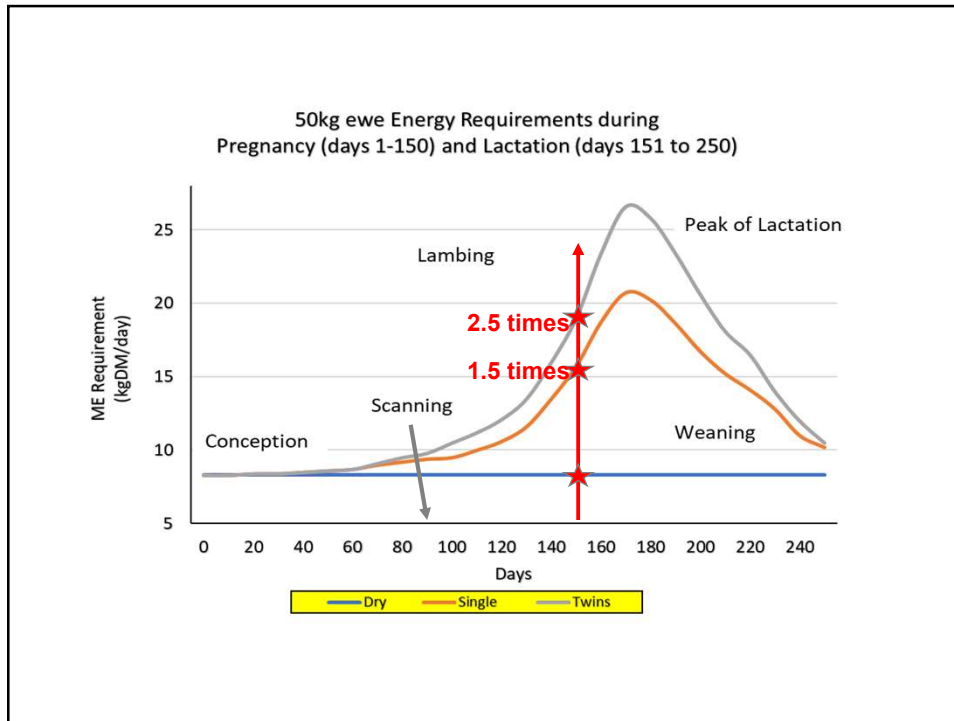
- reduction in gut bacteria
- digestion slows down
- intake drops

Energy and protein should be balanced to achieve optimum growth rates

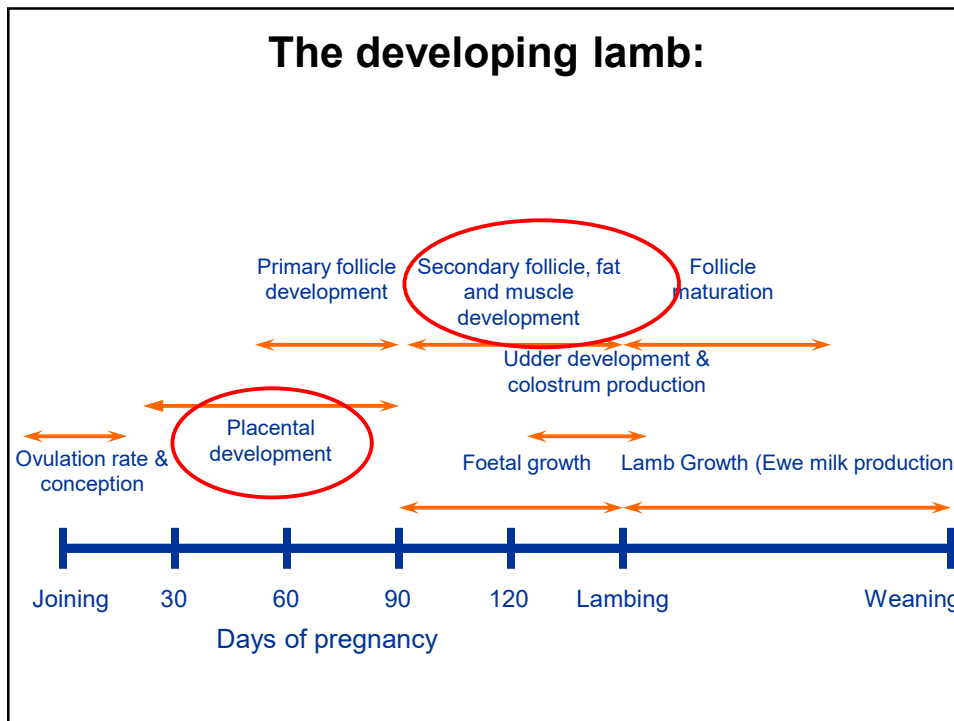
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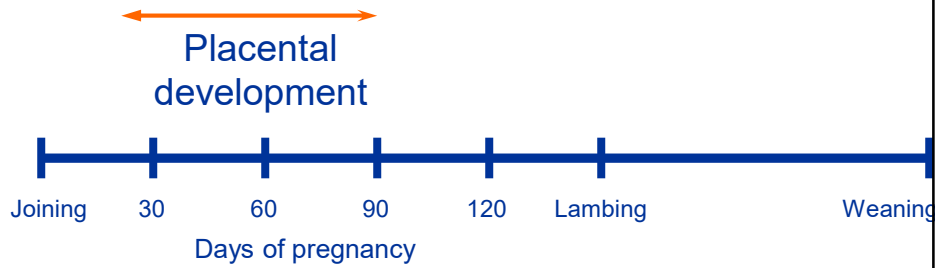
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The developing foetus:

Each lamb has its own placenta

The placenta produces hormones which

- maintain pregnancy
- help with udder development, milk production and availability and
- help with improving the ewe/lamb bond immediately after lambing

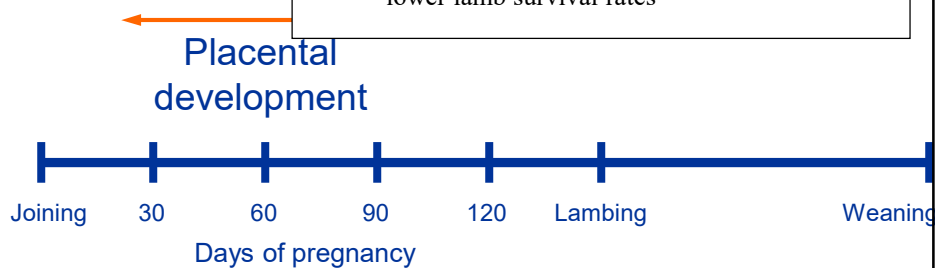


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The developing foetus:

Poor placental development can lead to:

- a reduction in secondary fibres
- broader overall fibre diameter
- lower lifetime fleece weight
- a decrease in muscle development/yields
- a reduction in foetal 'brown' fat, lifetime fat deposition and/or marbling
- lower birthweights
- lower lamb survival rates



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Intakes

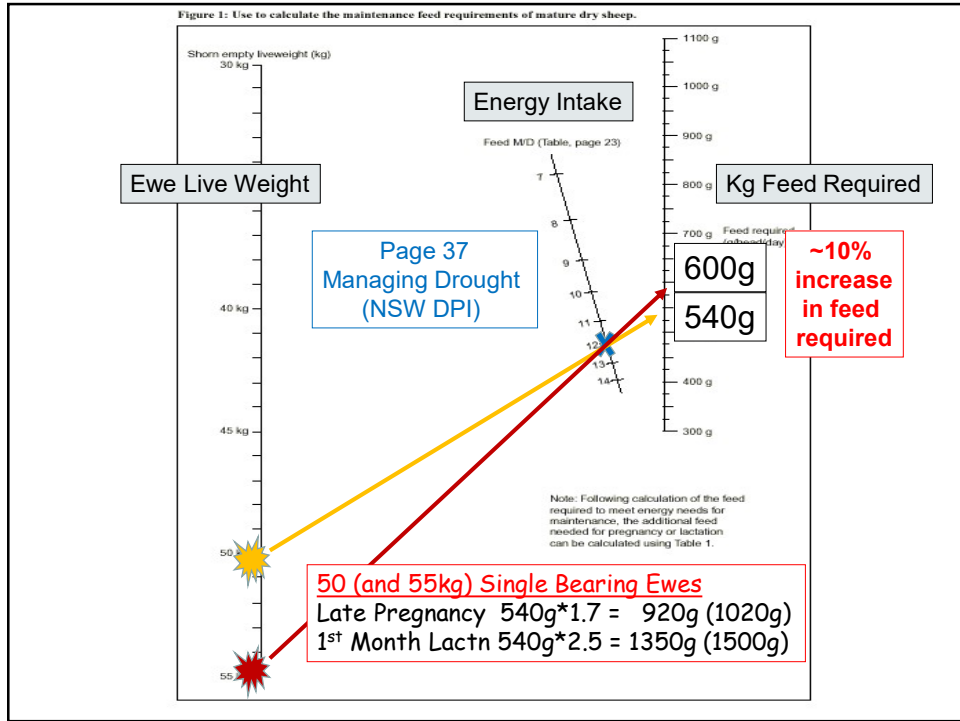
- For 'production' budget on anywhere between 3 and 4% of live weight (depending on age, weight, ration, waste etc)
- For 'maintenance' budget on between 1.5 to 2% of live weight
- Take into account stage of production

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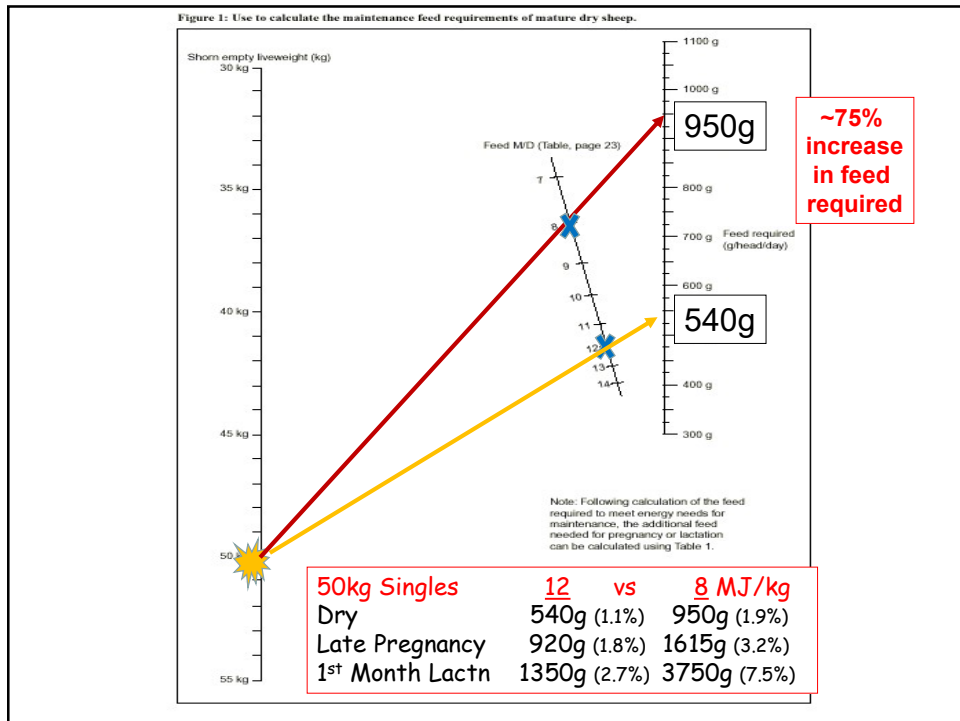
Intakes

- Young, light weight lambs (<30kg) on a high grain or pelleted diet with minimum roughage might consume 5% of live weight
- Lambs consume less as a % of live weight as they mature

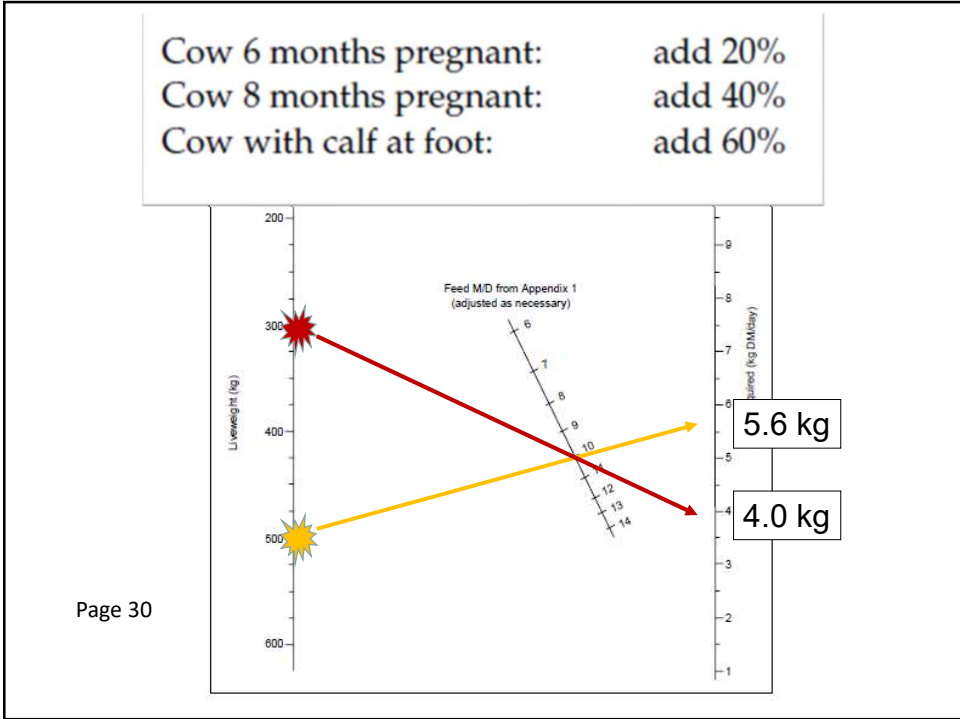
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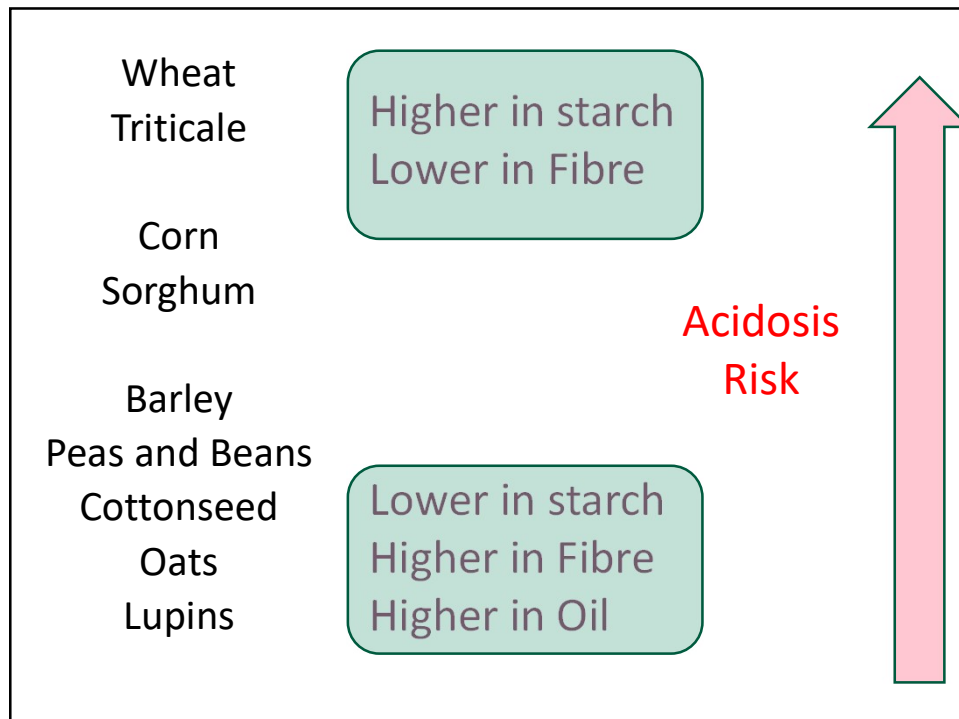
Cereal Grains

No benefit cracking/processing grains for sheep but there are for cattle

Whole grain (when feeding sheep)

- increases intake (by 25%)
- increases growth rates (20%)
- improves feed conversion efficiency (10%)
- reduces acidosis risk

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Grain	CP (%)	Starch (%)	Oil (%)	Sugar (%)	Fibre (%)
Wheat	12.5	18	2.5	2	2-3
Triticale	13.0	18	2.5	2	2-3
Corn	13.0	8	7.6	2-3	2-3
Sorghum	13.0	12	7	2-3	2-3
Barley	13.0	12	6	2-3	3-5
Oats	12.0	10	4	2-3	7-10
Brewers DDG's	10.0	26	6	7-8	2
Cottonseed	12.5	26	6	7-8	2
Lupins	13.0	26	6	7-8	2
Peas	12.5	26	6	7-8	2
Beans	12.5	26	6	7-8	2

'Bypass' starch
Greater glucose due to increased blood flow, lower progesterone and increased lactose
Low Sulphur

'Bypass' starch
Tannins

High Sulphur
Low Ca/P

Decreased digestion

Starch less rapidly fermented,
May reduce protozoa,
Antinutritional such as tannins,
Trypsin and Protease inhibitors and alkaloids

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Pellets/Nuts

Advantages

- ease of use
- 'complete' feeds
- 'balanced rations'

Disadvantages

- acidosis risk
- shorter retention time
- higher cost per unit of CP and ME
- digestibility/powdering
- palatability/sorting



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Minerals

Sheep require many minerals but most are needed in only small amounts

Ca, Na, P and Mg are most important

Cereal grains, pulses, processed meals and some hays/forages can be:

- Low in Calcium (relative to Phosphorus) and Sodium
- High in Potassium (relative to Sodium) which can affect Magnesium and Calcium absorption

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My thoughts:

Loose lick year-round

- 2/2/1 Lime/Salt/Causmag
- 2/2/1/1 Lime/Salt/Causmag/Gypsum
- 1/1 Dolomite/Salt
- 1/1 Acid Buf/Salt
- 2/1/1 Acid Buf/Salt/Gypsum

Lime (Ca); Salt (Na); Acid Buf/Dolomite (Ca and Mg);
Causmag (Mg); Gypsum (Ca and S)



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Vitamins

Normally Vitamin deficiencies are rare

Vitamins A,D and E are fat soluble and stored in the liver. Green feed usually ensures reserves

Vitamin B12 is produced in the rumen from cobalt. It is needed for cell growth, energy and wool production. Deficiencies rare but may occur on:

- sandy soils,
- if grazing grass/cereal pastures in Spring or
- if rumen not fully developed



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Total Mixed Rations

Advantages

Complete rations

Lambs cannot select against ration components

Can easily alter ration composition

Can utilize poor quality feeds

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Total Mixed Rations

Disadvantages

Difficult to use in self feeders

Trough feeding increases labour input

Can cost more due to preparation time
and/or if purchased off-farm

Need specialized equipment

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Thankyou



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