

Liveweight, Growth Rates and Fat Scores

Monitoring live weights and fat scores attempts to measure the success of total nutrients being fed and feed conversion efficiency.

Growth rate in livestock is related to protein and fat deposition that occur at different rates at different phases of the life cycle. To puberty, growth rates are relatively fast and relate directly to the laying down of protein into muscle and other body tissues. After mature body weights have been reached, growth rate slows down and the deposition of fat dominates.

Growth rates and live weights in young animals are a direct reflection on feed conversion efficiency, rumen function and the supply of adequate quantities of protein in particular, balanced with energy and essential minerals and vitamins.

- Growth rates from birth to weaning are driven by the establishment of early colostrum and milk production which is driven by advanced nutritional management of the dam before and after parturition. The **ELMS Pre-Calving & Pre-Lambing Supplement Pellet** and the **ELMS Early Lactation Supplement Powder Lick**, combined with good management are critical in this process. **ELMS workshops are available to help manage this process.**
- Growth rates from weaning to puberty are driven by pre weaning and post weaning general management and advanced nutritional management with the supply of adequate levels of high protein feeds balanced with energy, minerals and vitamins. **ELMS workshops are available to help manage this process.**
- The transition from being a simple stomached, milk-dependent young animal to one which is dependent on pasture and feed supplements is complex and has to be managed to ensure that rumen development and so feed conversion efficiency is not compromised. **ELMS workshops are available to help manage this process.**

Regularly monitoring weight gains allows you to fine-tune feeding management and is an essential tool for progressive farmers. Benchmarks for live weights at critical stages of the growth cycle have been compiled to ensure reproductive and future production performance.

It has been suggested that the amount of body fat in mature animals is a direct reflection of total energy intake and its adequacy or insufficiency for essential body functions.

Target fat scores have been suggested for different periods in the breeding cycle.

Fat accumulates when energy intake is in excess of the bodies maintenance needs. Provided total nutrient intake is balanced and sufficient and fat reserves adequate, mature breeders are able to mobilise energy (from fat reserves) in times of increased demand without depleting body protein or compromising their own health, potential foetal development, reproductive rate and lactation.

The energy demands of the breeder in the last stages of pregnancy and early lactation may outstrip the energy supplied in the diet and the animal looks for other energy sources. If fat reserves are used as a glucose source without a concurrent balanced energy supply from the diet, this process is inefficient and leads to a dramatic build-up of ketone bodies and other by-products in the blood stream, which can lead to pregnancy toxemia or ketosis.

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Liveweight and Growth Rate Targets

Being too fat can be as hazardous as too thin! Fat breeders are more prone to milk fever and parturition problems and if weight loss is too dramatic, they are prone to pregnancy toxemia, magnesium deficiency or a delay in return to oestrus.

ELMS Advanced Pre Calving and ELMS Advanced Pre Lambing workshops, along with ELMS advanced nutritional supplements assist in managing this process.

The effects of live weight and fatness in mature, grown-out animals are strongly correlated. However, animals can be heavy due to a large frame size but still in poor condition. So monitoring fat scores rather than body weight is the preferred option although care has to be taken as subtle changes in fat score are difficult to detect.

Sheep

Age	Merino	First cross
Pre-weaning growth rates	100 g/hd	200 g/hd
12 weeks at weaning	18-20 kg	25
20 weeks	25	30
12 months	32	38
18 months (first joining)	40	45

Cattle

Age	Weight in kg
Pre-weaning growth rates	0.7 - 0.8 kg/head/day
Weaning weight by age	80 kg - 200 kg dependent on age at weaning and breed
Post-weaning growth rate targets to puberty	0.5 - 0.8 kg/head/day
14 months (first joining)	260 - 330 kg dependent on breed

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Fat Score Targets

- In sheep and beef cattle, fat scoring on a 0 (severely emaciated) to 5 (obese) scale estimates fat cover over the loins and tail.
- Dairy cattle are often assessed on a 0 to 8 scale.
- Whatever the system, the score increases as the fat cover and fleshing increases.
- A change in one fat score is equivalent to 50 - 70 kg in cattle and 7 kg in sheep.

Sheep

Period	Target fat score range
Joining	3 - 4 (as fat as possible)
Mid-pregnancy	3 - 4
Pre-lambing	3 - 3.5
Weaning	2 - 2.5

Merino ewes carry more internal fat so may carry about half (1/2) a fat score less than British breeds and cross-bred sheep.

Cattle

Period	Target fat score range		
	Heifers	Mature cows	Dairy cattle using 0-8
Calving	2.5 - 2.8	2.7 - 3.8	5 - 6
Joining	2.5 - 2.8	2.0 - 3.0	3.5 - 5.5
Mid-lactation	Small rise	Small rise	4.0
Weaning	2.8 - 3.1	2.3 - 3.5	5 [drying-off]
Dry	3 - 3.5	3 - 3.5	Maintain at 5 - 6

Maintain herd within target ranges.

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