



MAXIMUM PROFIT AT MINIMUM COST

'Global Ovine' - Murray Rohloff - Sheep Farming Strategies International

Ask the right questions before looking for answers (think strategically).

Question: *What is your primary role?*

Answer: You are a grass farmer turning grass into money through sheep.
Therefore you have 3 tasks to manage;

- 1 Economically maximise pasture production.
- 2 Maintain digestibility over the animals' production seasons.
- 3 Maximise utilisation of pasture grown.

Question: *Where do you want to be financially and in work balance in 10 years time?*

Answer: This determines the management changes and new skills required.

Question: *What can you control?*

Answer: Everything inside the farm gate except the weather, so forget agonising about the rest.

Question: *Have you prioritised your aims by listing possible changes in order of profit?*

Answer: This list;

- 1 Better control of pasture quality over late spring/summer.
- 2 Better fit of feed supply to demand in early spring.
- 3 Better control of internal parasites.
- 4 Ability of lambs to thrive and finish on pasture only.
- 5 Ability of sheep to lower labour and health costs.
- 6 Increase longevity of ewes and rams.
- 7 Increase serving capacity of rams.
- 8 Ability of farmers to ration pasture over maintenance feeding times.
- 9 Ability of the breeder to improve genetics to counter input inflation.
- 10 Smarter selling practices.

Question: *Which traits have the most impact?*

Answer: This list;

- 1 Days to slaughter (growth) represent more than 45% of overall value (profit).
- 2 No. of lambs born, cost of running a ewe and lamb survival 12-14%.
- 3 Conformation contributes to only 3% of overall value to your sheep business.

Question: *How much variation in profit exists between breeders of the same breed?*

Answer: 20% is common based on profit/kg pasture DM eaten, so source genetics from the right breeder.

Question: *How do I know who the most suitable breeder is?*

Answer: The breeder who is undertaking a selection programme in line with your goals in a management situation reflecting yours. Seek proof and take notice of other ram buyers' experiences. (Beware; there are a lot of cowboys out there!)

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UNIVERSAL PRINCIPLES OF PASTORAL FARMING

- 1 Pasture must be eaten or removed for adequate regrowth to occur.
- 2 Rotational grazing can induce pasture to grow up to 80% more dry matter (DM) than set stocking when leaf area per plant is severely reduced.
- 3 To maintain good pasture growth under sheep, keep pasture mass between 1500 and 2500kgDM/ha. But slightly longer when cattle are also grazed.
- 4 Temperature, solar radiation (even on cloudy days) and soil moisture are the key drivers of growth.
- 5 Soil fertility affects growth but especially species composition. Fertiliser gives less aggressive plants a better opportunity to compete. Early flowering grasses are just as digestible in spring before seed head emergence, but plummet once the stem to leaf ratio increases.
- 6 Nitrogen is essential for photosynthesis, hence plant growth. Budget on 15kgs DM/ha response to a kilo of N under sheep farming.
- 7 All green leaf has similar energy content, but it is digestibility that is all important, especially for sheep production.
- 8 The greater the ratio of plant cell contents to cell wall, the greater the digestibility. Cell wall (cellulose) is digested by fermentation which requires time.
- 9 Dead matter explains 70% of the variation in pasture quality. It slows up food movement through the rumen. It can be very limiting to lamb growth in laxly grazed pastures.
- 10 Nutritive value declines with leaf age. For most grasses leaf older than 25 days of age plummets in digestibility. Summer pastures have higher stem content further reducing digestibility.
- 11 Legumes have higher nutritive value because of higher digestibility even at older leaf age.
- 12 Nutritive value declines with temperature rises over 25 degrees C. Cell walls thicken which lowers digestibility. Dead matter accumulates when warmer and drier. The proportion of dead matter in pastures is a key driver of autumn growth in lambs.
- 13 White Clover grows most rapidly when soil temperatures exceed 15 degrees C.
- 14 Grazing pressure prevents dead matter build-up and encourages legume content which struggles to compete for light if pastures remain longer than 10cm for more than 25 days.
- 15 When soil temperatures drop below 5 degrees C or soil moistures are at wilting point, the grazing management makes no difference to pasture growth or composition.
- 16 Senescent pasture (standing hay) has similar digestibility to when it was green. However its quality plummets after significant rainfall and decomposition sets in. Fungal build-up occurs in dead matter. Mycotoxins can be very harmful to animal health.
- 17 Graze and fertilise to maintain a healthy clover base. Clover is the main supplier of N for the grasses due to root nodule decomposition.
- 18 Grass component of pasture offers quantity for most of the year. Clover and herbs offer animal production advantages due to digestibility. Late flowering grasses and high sugar Ryegrass cultivars offer a longer season of higher digestibility.

SHEEP FEED REQUIREMENTS

Maintenance

- 1 Sheep require 40% less feed for maintenance per kilo of live weight than other ruminants.
- 2 Immature sheep need 8% more feed.
- 3 Entire males' need 15% more feed than ewes and wethers at the same weight.
- 4 Shearing can increase maintenance by 40-60%.
- 5 The cost of grazing low pasture mass can increase energy costs by 5%.
- 6 Slope can increase energy cost by 20%.
- 7 Digestibility can affect DM requirements for maintenance by 65%.

Growth/Production

- 1 Fat is 1.7 times more expensive to lay down than protein, so finishing is more expensive on feed.
- 2 Highly digestible feed allows for a 30% energy saving per kilo of growth as it is more efficient.
- 3 Only in the last 6 weeks of pregnancy are ewe requirements increased. Demand is 3 times higher near birth than at 6 weeks before birth. A ewe carrying triplets requires 50% more energy than a single bearing ewe.
- 4 Ewes require 20% less energy to restore their body weight when lactating.
- 5 Peak lactation can be 80% higher than late lactation. Underfeeding can limit the quantity and duration of the peak. Feed allocation between seasons can result in a 20% weaning weight difference.
- 6 Milk production increases by 20-50% per additional lamb reared and greater in well fed and conditioned ewes.
- 7 Ewes with twins cannot eat enough pasture to grow lambs at 300g/d if feed is below 7cm even on spring pasture.
- 8 The most limiting factor in feed allocation is always energy; protein is adequate on pasture.
- 9 Fast growing animals use less energy and are more efficient. Genetics plays a large part in grazing behaviour. Animals selected to respond to concentrate diets are less equipped genetically to handle pasture only diets.
- 10 60- 70% of production occurs from late spring to midsummer. Digestibility rules. About 80% of profit comes from this period.
- 11 Trace elements Co, Se, Cu deficiency can all reduce growth, but are cheaply corrected.

FEED BUDGETING

To accurately calculate daily flock requirements and seasonal feed budgets, a large amount of information must come together. Feed budgeting software is essential to take into account all the seasonal variations in feed quality, quantity and animal demands of a variety of animal classes which have differing demands across the seasons.

Farmers usually grow into more precision as they tackle the basic requirements and achieve skills in assessing pasture supply and demand.

The first priority is to measure pasture more accurately between seasons. The most basic tool of pasture measurement is the Pasture Stick.

- Sheep cannot harvest below 400 kgs DM/ha or about 5mm above ground level.
- 5cm equates to about 1500 kgs DM/ha of winter and spring pasture, or 2000 kgs in summer/autumn pasture but may have up to 25% as stem or dead matter.
- 7cm equates to 1800 kgs of winter/spring pasture, or 2500 kgs of summer/autumn pasture.
- 10cm equates to 2300 kgs of winter/spring pasture, or 3300 kgs of summer/autumn pasture.
- 15 cm equates to 3000 kgs of winter/spring pasture, or 4600 kgs of summer/autumn pasture.

Farmers can become very accurate in assessing pasture quantity. But they need to be mindful of the deterioration in quality as the season's progress. The common biases in assessing quantity are:

- Under-estimation of dead matter content after midsummer.
- Under-estimation of high mass pastures.
- Low soil fertility matted swards are under-estimated.
- Upright, low density swards (especially pastures under 2 years of age) are over-estimated.
- High legume content swards are over-estimated.
- Pastures appear longer when the sun is low increasing shadow length.
- Clumpy pastures give the impression of more pasture present.
- Soil fertility transfer by grazing animals to higher slopes gives the appearance of more feed over the field.

As digestibility falls, allocations should increase if production is desired.

When taking up feed budgeting, start at the simplest time of the year, which is winter when the animals are at or near maintenance. Take one step at a time and become familiar with the tools and methodology.

Aim to finish each season with a pasture cover guaranteed to deliver an optimal production level for the next season. If the seasonal budget indicates that there is a shortage to achieve such a pasture cover, the deficit must be met by bringing in additional feed or dropping stock numbers so animal performance is not compromised.

If the season proves better for pasture growth than the average season, management is forewarned. Excess pasture mass will lower feed quality which will compromise future lamb growth rates. The mixing of cattle with weaned lambs is a very effective strategy of controlling less digestible pasture components when grazing power of the ewe mob is insufficient to clean up pastures following lamb grazing. Mixing such species classes is complementary to both.

Rotational grazing enables farmers to have better control of both quantity and quality. By coupling this control with feed budgeting it enables farmers to be proactive rather than reactive when seasonal variations from the normal occur. Other than learning some new skills, the capital outlay usually involves only the purchase of some portable electric fencing to control intakes for maintenance feeding in winter and controlling the quality of feed in summer when surplus pasture mass can cause feed quality issues.

KEY POINTS: Measure supply, calculate demand and understand seasonal digestibility/quality changes, farm for clover as clover looks after the grasses and set up for the next season.