

MANAGEMENT OF THE PASTURE COMMUNITY:

PASTURE MANAGEMENT FOR MILK PRODUCTION

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"Daltonby Park", Poowong, Victoria, 3988

**SUMMARY:** "Daltonby Park" is a dairy farm at Poowong in the Gippsland district of Victoria. The farm runs 200 milking cows and 114 replacements on 67 ha plus agistment country. Management is directed at increasing the total solids component of milk and also milk protein. This requires emphasis on: (1) nitrogen fertiliser to target feed gaps; (2) feed-budgeting and grazing management to achieve optimal pasture yield targets; and (3) use of new pasture and forage cultivars to extend the supply of high quality feed. On our property we need to be attentive, decisive and prepared to act both on gut feeling and recorded data. We need to be able to search through all the ever increasing amount of information available and select what is important to us. Finally, we strive to increase efficiency from our pasture based system to meet market requirements.

Our farm is situated at Poowong (100km south-east of Melbourne) in the South Gippsland district. The farm has a total area of 67 hectares. Seven hectares are situated 3km from the dairy farm and used for raising young stock along with main property. Agistment is frequently used to feed young stock and dry cows. On the 60 hectares we have 57 hectares of pasture on country varying from flat to steep. The soil is heavy grey clay soil, cover-

ing mudstone. The soil has fair drainage and a high water holding capacity and naturally moderate fertility levels. Soil pH (water) ranges from 6 to 6.3 and Olsen P of 25 to 45. The district rainfall average is 1105mm.

The dairy herd consists of 200 milkers and 115 replacements. Calving started July 10th and using induction finished by August 25th. All cows are dried off by June 1st. We aim to have cows at condition score 5 (condition score scale 1 to 9) at drying off and maintain the score until calving.

Development has changed the farm from 8 paddocks to 28, thus giving scope for improved grazing. The results from improved grazing has not only lifted total milk solids, but also protein percentage, the most valuable component (Table 1).

Table 1. Changes in farm performance.

Parameters	90/91	93/94
<i>Farm details:</i>		
Effective milking area (ha)	57	57
Runoff (ha)	0	7
Total area (ha)	60	67
Total effective (ha)	57	64
Milker number (peak)	185	200
<i>Supplements fed:</i>		
Grain (kg/cow/year)	925	1050
<i>Stocking rate:</i>		
Milkers/ha milking area	2.89	3.51
Milkers/ha total effective area	2.89	3.12
<i>Butterfat production (kg):</i>		
Total production	34037	50245
Per cow	206	251
Per milking hectare	597	881
Per total ha	567	750
<i>Protein production (kg):</i>		
Per cow	153	202
Per milking hectare	442	710
Per total area	420	604
<i>Value of products:</i>		
Milk (cents/L)	21.9	23.1
\$ per kg butterfat	5.39	5.70
\$ per kg total solids	3.10	3.15
\$ gross margin	1896	3141

**Reasons for improved farm performance**

- Increased knowledge from travelling, reading, listening and critically appraisal of our own performance;
- Better use of fertiliser targeting shortfalls;
- Improved pasture management, better pasture quality;
- New pasture cultivars, better feed distribution, more kg are grown with increased food value;
- Increased cow numbers and cow quality.

**Monitoring**

We deliberately set a pasture target and use feed budgets to ensure we have a specific amount of feed

**Table 2.** Changes in pasture quality.

Season	Metabolisable energy (MJ/kg DM)	Range	Crude protein (%)
Autumn after break	11.5	10.9 - 12.0	26
Winter	12.1	11.0 - 12.6	30
Spring	12.4	11.1 - 12.0	27
Summer	10.0	7.0 - 12.1	17
Autumn before break	7.7	6.0 - 9.3	13

at the start of calving. Our stocking rate at the present calving pattern requires we have 1800 kg DM/ha average cover at end of April. By start of calving July 10th, we require 2500 kg DM/ha. Techniques used to achieve this are block grazing, nitrogen fertilisers, restricted feeding for maintenance only, agistment, and oversowing with short term ryegrasses. We are happy to remove surpluses to the target if the need arises.

Our motto for pasture management is be out there, know what's happening and take action from information gathered. We regularly access pastures and monitor growth rates to check if targets are being achieved. This system allows time to change management if the need arises.

### Pasture control

Once cows have calved it is very important to control the rate of pasture use to ensure we do not run out before spring growth exceeds our stocking rate requirements. By continuing to monitor growth rates and only offering cows grass needed, we maximise our pasture use and maintain pasture quality. Rotations have the aim of utilising all the feed offered at each grazing; it is important to train the animals to consume all the feed offered each grazing. If this is not occurring, smaller grazing areas will be offered each grazing. We aim to leave a pasture residue of between 1200 and 1400 kg DM/ha. This has resulted in higher quality pastures next grazing (Table 2).

Along with changes that can be gained from grazing management, cultivar differences have also been recorded. With the late flowering varieties being the highest in energy Banks and Yatsyn Perennial Ryegrass perform well in this area.

### Feed shortfalls

Our farm has two periods of feed shortage, likely to be prolonged. These are the August/September and January/April periods. Grazing patterns are designed to minimise the effects of these two periods. Starting in autumn, rotations are slowed

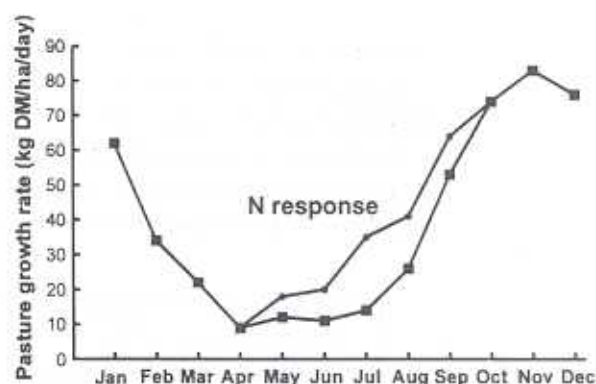
down to fit the feed budget projections. In the past, rotations from 40 to 80 days have been used. This has the effect of carrying more high quality feed towards our late winter feed shortage.

There are many options to increase winter feed supply and slower rotations, nitrogen applications and agistment have often been used. We have often used nitrogen at 50 kg/ha with responses up to 15 kg DM for each kg of nitrogen applied (Figure 1). This is an easy way to manipulate pasture growth and feed on hand. Forward budgeting is required. As we get close to spring our pasture rotations become quicker for two reasons - the extra spring growth makes more than enough for cow requirements and the shorter rotation helps increase clover percentage in the sward. We slow the rotation rather than conserve feed later in the season. This saves fodder conservation costs. Slow summer rotations in our environment maintain adequate pasture quality and result in less pasture damage if there is a prolonged dry period.

Topping also helps pastures to maintain quality and boost growth later in the season. Also there appears to be better pasture in the following autumn in all aspects; quality, quantity and composition. We have seen an improvement in per cow performance; as a direct result of topping, increased milk and pasture protein have been recorded. The negative sides of topping are the costs and time involved.

During late October 10% of the farm is planted to turnips. This supplies 40% of the cows summer energy requirements.

Other guidelines we use - never let pasture stand at more than 3,500 kg DM/ha. At this level the pasture would not be contributing to the overall pasture cover, in fact would be decaying underneath fairly quickly.

**Figure 1.** Pasture growth curves for "Poowong", 1986-89.

### Fertiliser program

Fertiliser applications are designed to minimise the effects of low pasture growth. Our fertiliser program has improved pasture growth which has assisted us in lifting stocking rate and total production.

### Conclusion

On our property we need to be attentive, decisive, and prepared to act both on gut feelings and recorded data. We have to be able to search through all the ever increasing amount of information available and select what is important to us. Finally, we

Table 3. The fertiliser program on "Poowong".

Application time	Fertiliser type	Rate (kg/ha)	Nutrients			
			N	P	K	S
January	0 6 17 2:1	500	0	25	84	37
April	15 20 0 DAP	125	22	25	0	2
July	18 20 0 DAP	175	31	35	0	3
August	18 20 0 DAP	125	22	25	0	2
August	0 0 50 Potash	100	0	0	50	0
Total			75	115	134	44

strive to increase efficiency from our pasture based system to meet market requirements.