SOLVING THE PROBLEM OF FEEDING HIGH YIELDERS AT GRASS.

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Independent nutritionist Robert Cope questions the benefits of spring grazing.

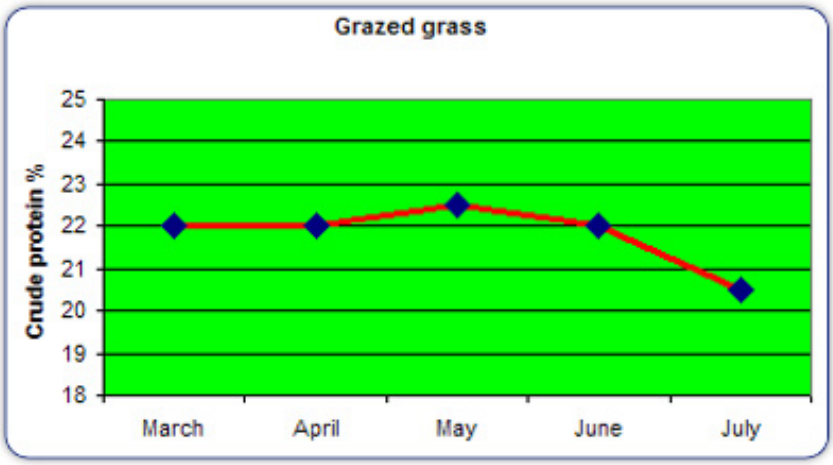
Here is a question for all dairy farmers with high yielding early lactation cows:
How do you make the best use of spring grass?
Answer: Let the cows lie on it but not eat it!
OK, that may be a bit extreme - but it really is one of the worst feeds for high yielders.
Now before all you New Zealand system aficionados start sending me hate mail, I will try to explain.

Let's set the scene. I am not referring to mid and late lactation cows. If they are in calf and in good condition, spring grass will do a good job in providing low cost feed. Heavy milkers will need supplementation of course.

I class a high yielder as a cow in the first 120 days of lactation giving 30 litres or more per day. To balance her ration we need a total protein in the diet of say 17%-17.5%, with a good proportion coming from quality protein sources to supply the bypass protein.

Spring grass is high in protein, typically 22%-25% but is mainly rumen degradable.

See figure 1. Protein in spring grass.



This very high protein drives milk yields and creates a shortfall of energy and bypass protein. This results in cows milking off their backs and losing body condition, cumulating in poor health and fertility. This in turn leads to high culling rates for failure to conceive.

All we need to do now is add some bypass protein and the problem is solved! Unfortunately it is not that simple. Sources of bypass protein are mainly high in crude protein, making it very difficult to keep total levels down to the preferred 17%-17.5%.

See figure 2. Bypass protein sources.

Feed Material	Crude protein % (dry Matter basis)
Prairie meal	68
Soya	51
Sopralin	52
Soypass	50
Amino Green	44
Maize germ	26

To go with these high bypass protein feeds, we must include other feeds of lower protein. Other characteristics of spring grass are that it is fast fermenting, low in fibre & sugar, but high in unsaturated oil. Looking to balance these aspects, the choice is low protein raw materials that are slow degrading, high in fibre & sugar and low in unsaturated oil.

Some suggestions are a selection of the following in the ration: Molassed sugar beet feed; Soya hulls; maize grain and palm kernel. Even with these materials, it is extremely difficult to produce a compound feed with a low protein level and high in bypass protein. Keeping it down to 15%-16% is the best you can expect. Although this type of diet will cost more because it has high quality raw materials, I believe they offer the best value.

So now we have this super cake in the bin and we are going to feed a maximum of 8 kilos per day and everything will be perfect. Well, not quite. We are well on the way though. The problem is that even with 8 kilos of this cake, the amount of grass eaten still throws things out of balance. Figure 3 shows several rations. I am trying to achieve a diet with

- Total crude protein of 17%-17.5%
- Bypass protein over 20% of total protein at 30 litres/milk/day
- Bypass protein over 25% of total protein at 40 litres/milk/day
- Meet energy needs
- Enhance butterfat

Table 3. Specimen rations assuming abundant good spring grass.

Feed Material	A	B	C
Milk yield cow/day	30 litres	30 litres	40 litres
Spring grass	59	55	33
Grass silage			25
Standard dairy 18	8		
High bypass dairy 16		8	8
Molassed beet feed			2
Palm kernel			1
Diet crude protein %	21.5	20.5	17.45
Bypass protein %	18.0	23.3	28.4

Spring grass 18% Dry matter, 22% crude protein, 12.5 ME MJ/kg DM.
Grass silage 26% dry matter, 14% crude protein, 11.2 ME MJ/kg DM

Ration "A" is common. A standard dairy cake is too high in protein and too low in bypass protein. Are you are one of those farmers that stay on the winter cake for the spring and summer? Is it 18% or worse still - even higher in protein? Is this the right cake for your cows? Is your spring ration full of wheat, barley, maize gluten, sunflower and rape? I prefer beet pulp to citrus pulp. Check how much bypass protein is used.

Ration "B" with the high bypass protein in the cake is still too high in total protein, but supplies adequate bypass protein. For most systems this is about the best we can achieve.

Ration "C" is for a much higher yielding cow. It ticks all the boxes but the cow needs to be allowed access to eat 25 kilos of grass silage and 3 kilos of concentrates in the mix. The 33 kilos of grazing is for about 4 hours grazing per day. This means keeping cows in or restricting grazed grass.

I can just hear you thinking, "It is easy to talk about this but he does not have to do it". You are correct, I don't. But you must weigh up the consequences of not feeding high yielders correctly at grass. The bottom line is spring grass is not the best feed for high yielding cows.

Just let them lie on it.