



St Davids Farm Newsletter

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Targets for rearing dairy heifers – our future herd

The time from weaning to calving is a very important period for a dairy heifer. Management during this time has a noticeable effect on future yield, fertility, calving difficulty and longevity.

Insufficient growth can result in heifers which are too small which means that, if they do get in calf, they struggle to cope when introduced to the herd. This results in reduced yield and delayed future fertility.

The average length of a cow's life in the UK is currently 3.7 lactations and mature yields are not obtained until the fourth lactation onwards. 40% of all live heifer calves fail to calve a second time, mostly as a result of poor fertility and low milk production. These factors can, to a large degree, be managed during the rearing period which therefore should be treated as a time of great importance.

Weaning

Assuming that we are aiming to calve Holstein heifers at two years old, the following basic points are pertinent:

- Aim to wean calves at five weeks old – at which point they should be eating at least 1kg/day of weaning concentrate.

- Wean before moving to follow-on accommodation in order to reduce the amount of stress at any one time.
- Target growth from weaning to 16 weeks is 0.9kg/day.
- Remember, protein is needed for growth.

Management pre-puberty

Puberty usually occurs at around 280kg. It is important keep the rate of growth as constant as possible. If a period of inadequate diet or disease is sustained by the animal, it will result in a period of compensatory growth which will, in turn, be detrimental to future milk production.

Puberty to six weeks before service

From the point of puberty at ten months old, high growth rates will have no adverse effect. Aim for service at target weight of 350-380kg, at which point, the heifer should be 14-16 months old.

The service period

The level of nutrition over this period is important for ensuring high pregnancy rates and, therefore, entry into the herd at the optimum time. In order to achieve the 350-380kg target, heifers need to be



growing at approximately 0.8-0.85kg/day. If they are growing at less than 0.75kg/day it can result in loss of body condition which will lead to reduced fertility.

Factors to consider over the service period:

- **Stress:** Turnout, housing, overcrowding, disease challenge; these ordeals can alter the concentration of reproductive hormones and therefore can have a significant negative effect on fertility.
- **Housing:** Oestrus behaviour is suppressed during the first heat after housing. Therefore, the heifers should be housed six weeks before service in order to give them time to settle.

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Ensure there is an adequate loafing area so that oestrus can easily be demonstrated and therefore detected. Heifers should never have to compete with cows for feed space during this period.

Management during pregnancy

Heifers should be grouped according to size at this stage. Although rapid growth in the pre-pubertal heifer is detrimental to yield during her first lactation, the opposite is true during her pregnancy.

Aim for a growth rate of 0.8-0.9kg/day for the first seven months of pregnancy. It would then be advisable to body condition score two months before calving. A score of greater than three

has been shown to result in a higher proportion of assisted calvings.

Pre-calving

During this time, you are aiming for:

- Low incidence of calving difficulties
- Low calf mortality
- Trouble-free entry into the herd

At this stage, the heifers should be introduced to the transition ration (usually containing a proportion of the milking ration). This should be restricted to the amount required to acquaint heifers – don't let them get too fat at this stage!

Calving

The heifers should be in a familiar environment to calve – there is

evidence to suggest that moving the heifer to an unfamiliar calving box can increase calving difficulties.

To summarise

- Rates of growth during the rearing period influences yield
- The level of nutrition around the time of service affects pregnancy rates
- The management of the heifer at calving influences the incidence of calving difficulties.

Attention to detail and good management during this crucial time have a noticeable effect on future longevity and overall herd profitability.



Getting more from grass at turnout

Early turnout with good grassland management will boost returns, however early turnout is dependent on having enough grass and of course the weather!

This is not the only problem as spring grass itself can present nutritional imbalances due to the high levels of protein present.

Much of this grass protein is broken down quickly in the rumen and the subsequent build up of free nitrogen is followed by increased blood and milk urea nitrogen levels. The cow then has to use dietary energy to remove this excess urea as a waste product. The

problems associated with this chain of events have already been linked to lameness and infertility with many farmers, through milk quality reports, already monitoring milk urea levels.

Biotol have looked into ways to solve this problem, which occurs at grass during the spring and autumn periods every year. Research from Biotol initially conducted at INRA in France, examined the effect of certain plant extracts on free nitrogen in the rumen. The results showed that these extracts reduced rumen ammonia nitrogen levels.

This plant extract captures free nitrogen in the rumen before it is excreted and wasted so improving protein utilisation. Hence, the utilisation of the nutrients in the grass by the cow is increased, increasing milk from grass.

Further work revealed its effect on certain types of protozoa within the rumen. This is of commercial interest to farmers as it improves the microbial protein supply from the rumen. This improved rumen efficiency results in increased milk production and reduced feed cost.

This follows on from previous work carried out by Biotol to find 'a rumen specific yeast' that works well in the rumen, to improve fibre digestibility and reduce acidosis.

The particular strain of yeast has been shown to improve energy utilisation, which explains the significant milk yield increases of 1.5 to 2 litres/cow/d. A combination of the yeast and the plant extract will be commercially available to farmers in a farm pack this Spring as Biotol SC Emerald, is available from Three Counties Feeds.

Robin Hawkey – 07733 100199

Is my feed rate too high?

The question “is my feed rate too high?” is one that is often asked by progressive dairy farmers who are trying to maximise their margin over concentrate (MOC) figures, and thus hopefully maximise their overall farm profit.

The connection between MOC and farm profits is often exaggerated as most MOCs are usually expressed per cow or per litre which obviously takes no account of acres used, labour or capital employed and a whole raft of other potential costs. There is also the question of what is concentrate? (brewers grains etc.) as well as the way on-farm produce is fed to the cow i.e. a ten acre field of wheat whole-cropped is a forage but combined is a concentrate, yet still cost the farm the same to produce. Therefore it's wrong to naturally assume that a high MOC farm is automatically a high profit farm.

However, this being said it is very important that whatever your farming system, you should use your costing figures as an internal management aid to increase efficiency and physical performance and thus overall farm profit.

Feed rate is simply the amount of concentrated feed fed divided by the amount of litres given. Therefore in order to alter feed rates the farmer must either reduce the level of feed required to produce that litre of milk or must produce more litres from the same inputs (even more viable than in the past due to the reduction in quota costs?)

When a farmer's feed rate increases in many cases it is not because of increased feeding but more to do with lack of milk. Basically the efficiency with which the cow is turning concentrated feed into milk is dropping thus as in order to maximise efficiency

the lower the feed rate the higher the potential MOC figure per litre.

The above statement is true in pure isolation, but when taken in a whole-farm context, things can be a little different. Several years ago when I asked a farmer if his rolling feed rate was too high (at 0.41 kgs/litre), he replied “probably, but it's the only problem I've got” meaning that although the feed rate was higher than average the rest of the cows performance was superb. Feed rates in isolation take no account of milk quality, fertility, cow condition, cow longevity or many other less quantifiable criteria.



The cost of all forms of energy in the world is moving up and thus concentrated feeds are being affected. With feed prices rocketing, the temptation to reduce feed is obviously great. However if slashing feed rate is your goal then be aware of the potential potholes that lie ahead. The best way to reduce your feed rate is to send more milk from the resources you have. The principle of margin feed rate still applies to a certain extent but with better understanding of high production dairy cow nutrition and the ability on many farms to feed a vast array of different concentrates (either as compounds, blends, straights or home-grown material) cow output can be

increased without the extra milk costing a fortune.

Different cows and different systems require different feed rates. Very extensive systems by nature rely on a low feed rate due to increased costs in extra animal numbers, more land required, extra tracks for grazing etc whereas intensive systems coupled with high genetic animals can have higher concentrate demands. As stated it is not totally true that feed rate will be automatically higher, but due to the energy density required it may well be. This could be deemed a bad thing until again you look at the bigger picture. The amount of milk produced per

animal, hectare and probably most importantly per farmer are all vital to a good healthy farm business. In many cases there is nothing more cost effective for producing milk (in terms of mega-joules of energy per pound spent) than an arctic load of wheat or sugar beet but this strays into the area of cost which is a huge topic to be dealt with at a later date.

In summary, if your cows are milking well, with good milk quality, getting back in calf and gaining condition then be wary of trying to cut feed rate, but if you do wish to cut feed rate the best way to do it is to get more milk from healthy, efficient cows.

Mark Causey – 07968 168449

What's it worth? Grazing sampling results – April 2007

April provided excellent conditions for grazing, with warm sunny days resulting in high sugars and high intakes.

As I write some welcome showers are upon us which will be necessary if we are to continue to enjoy similar grazing in a month's time. The warmth has been great for eating grass, but less brilliant for growing it, and as such many cows (especially in the dryer areas) have caught up with, if not overtaken growth rates.

The results for April show lower crude protein percentages that one would normally expect for this time of year (30%+ in 2006). One theory is that the dry weather has meant much nitrogen application has yet to be taken up by

the plant, in turn reducing protein content. This recent rain will offer the opportunity to investigate whether this is indeed the case, through next month's results, and whether or not grass growth rapidly responds to the wash in of nitrogen. This assumption is possibly backed up by many current low milk urea readings. (Levels normally rise with cows at high protein early season grass). One would also have thought that dry matter readings would be higher than our average suggests, given the weather conditions we have experienced.

Cows generally appear to be milking well where the grass has remained ahead of them and dung (so far) doesn't seem to be too green and thin in most cases, which would tie in with dry conditions and lower protein results. May's results will include some results from Dorset and Cornwall in case anyone is feeling left out?!

Charlie King – 07917 203790

	DM%	ME (MJ/kg)	CP %
Devon	16.8	12.5	19.4
	16	12.7	18.5
	20	13.5	14.4
	15.8	12.8	31
	23.5	12.1	16.3
Somerset	22.2	12.3	26.3
	13	13.3	19.6
	13.5	13.3	19.8
	15.7	13.3	18.4
	17.8	12.5	29.3
	21.7	12.2	25
Average	17.8	12.8	21.6



Welcome Paul Baker

It is with great pleasure that Three Counties Feeds welcome back Paul Baker.

Paul has spent the last three years working with another compounder in the South West but decided he wanted to concentrate on dairy cow nutrition and wanted to help farmers achieve their goal in feeding high yielding dairy cows. Paul will be developing a new area for the company in North and West Somerset. "I'm looking forward to working with a team of people that are able to provide a 'hands on' approach to nutrition, which I believe can only



come from experience and regular on farm presence. Having had the opportunity to work with other companies over the last three years this

has broadened my ability to help farmers and given me a useful insight into how other companies work."

Paul Baker – 07785 751396