Making the Most of your Suckler Cows

Updated March 2007



About HCC

Hybu Cig Cymru - Meat Promotion Wales (HCC) is the strategic body for the promotion and development of red meat from Wales and the development of the Welsh red meat industry. Its mission is to develop profitable and sustainable markets for Welsh lamb and Welsh beef for the benefit of all stakeholders in the supply chain.

HCC's five strategic goals are:

- · Effective promotion of Welsh Lamb and Welsh Beef and red meat products in Wales
- Build strong differentiated products
- Improve quality and cost-effectiveness of primary production
- Strengthen the red meat supply chain
- Effective communication of HCC activities and industry issues

This booklet forms part of a series of publications produced by HCC's Industry Development team. The Industry Development team deal with a range of issues that include:

- Technology Transfer
- Research and Development
- Market Intelligence
- Training
- Demonstration Farms
- Benchmarking

Hybu Cig Cymru - Meat Promotion Wales PO Box 176 Aberystwyth Ceredigion SY23 2YA

Tel: 01970 625050 Fax: 01970 615148 Email: info@hccmpw.org.uk

www.hccmpw.org.uk

No part of this publication may be reproduced or transmitted in any form by any means without the prior written consent of the company. Whilst all reasonable care has been taken in its preparation, no warranty is given as to its accuracy, no liability accepted for any loss or damage caused by reliance upon any statement in or omission from this publication.

> Technical content ©MLC 2007 Design ©Hybu Cig Cymru 2007

Contents

1.	Increase number of weaned calves	2
2.	Reduce calving period	5
3.	Increase cow longevity	9
4.	Use high EBV terminal sires	11
5.	Reduce variable costs	12
6.	Reduce fixed costs	13
	Conclusions	13
	Appendix 1 - Condition Scoring	14

Further information

For further information on any of the content in this booklet or on the work undertaken by HCC please contact HCC on tel: 01970 625050, email: info@hccmpw.org.uk or visit www.hccmpw.org.uk.

Maximising suckler cow margins

The main output from the suckler herd is the suckled calf so it is crucial that each cow produces and rears a healthy well-grown calf every year. Key to this is good management of heifers, cows and bulls to optimise fertility and maintain a compact calving period.

Generating the most income from your calves relies on improving the genetic potential of your stock. A breeding policy based on estimated breeding values (EBVs) and indexes will enable you to make informed decisions and breed high quality cattle for slaughter, sale or breeding.

Maximum margins are driven by reducing costs from improved management and technical performance combined with adding value by producing what the market wants and selling at the right time to the appropriate buyer.

This leaflet highlights 6 important issues for suckler herds aiming to improve their net margins.

1. Increase number of weaned calves

There are several approaches to increasing the number of calves weaned per cow served and they primarily revolve around maximising fertility of cows, heifers and bulls and controlling infectious diseases. Planning is crucial, particularly in relation to nutrition, breeding and the health of the herd.

Cow nutrition

Feeding suckler cows is all about making sure they are receiving the correct nutrients to conceive, grow and give birth to a healthy, vigorous calf and then produce enough milk for the calf to thrive. In essence this means managing body condition to:

- ensure cows are not too fat at calving thus minimising calving difficulties
- start cycling again soon after calving
- conceive again quickly to produce a calf every year
- lay down body fat when lots of cheap feed is available (usually grazing)
- mobilise body fat in the winter to reduce expensive winter feed costs.

If cows are over fat or too thin then fertility declines (Table 1). Accurate winter feeding of suckler cows relative to their body condition score is crucial. This means that cows need to be grouped according to body condition and fed appropriately.

Particular attention needs to be paid to first and second calvers to ensure they receive adequate nutrition to enable them to increase their own body weight, produce sufficient milk for their calves and get in calf again.

Maiden heifers should be bulled at 65% or more of their expected mature weight. They must be fed to ensure continued growth at around 0.8kg/day once safely in calf, with feeding maintained rather than increased in the final third period of pregnancy to avoid calving problems through over fatness. Evidence suggests that heifers are more productive over their lifetime when calved at two years old rather than three years, under good management.

100 cows with BCS	% Conceptions to a single service	Expected calving period for over 95% herd
1	35	24 weeks
2	55	12 weeks
3	70	9 weeks
4	60	12 weeks
5	50	15 weeks

Table 1 Effect of body condition score on conception rate and calving period

Calving difficulties

Calving difficulty is a common cause of fertility problems in heifers and cows. The two main factors affecting calving difficulties under the farmers control are:

- Choice of bull
- Body condition of the cow

As far as choosing an easy calving bull is concerned, it is not the breed of the bull that matters as much as the calving ease characteristics of the bull himself – look for bulls with better than average calving ease EBVs – see section 4.

There is a strong genetic correlation between calving difficulty and calf mortality for beef sires. Therefore calf survival can be increased by minimising complications at calving through genetic selection for calving ease.

For more information on selecting bulls please see the HCC Bull Buyers Guide.

Cows should be managed to be fit and not fat at calving. Over fat cows have been shown to suffer more difficult calvings and produce calves that are slower to suckle and are more susceptible to health problems. The cows themselves then take longer to get back in calf.

Health management

Good fertility and productivity is reliant on good cattle health. Diseases such as Bovine Viral Diarrhoea (BVD), Leptospirosis and Campylobacter will reduce fertility and if a cow is observed showing repeated signs of heat, it is advisable to have her checked by your vet. It is important to avoid stressing cows during the breeding season and talk to your vet about any supplementary vitamins or minerals that should be supplied in the diet.



Health problems can have a huge impact on fertility and performance of cows and calves – it is an unseen cost that can be very high (Table 2).

	BVD-MD complex	IBR	Leptospirosis	Johnes Disease
Animals affected ('000) head	325	102	209	1
Costs associated with production losses, treatment, control and monitoring (M£)	39.6	6	11	0.8
Cost per animal	£122	£59	£53	£800

Table 2 Estimated incidence and cost of cattle diseases in Great Britain

 Based on 'best estimates' taken from a paper by Bennett and Jpelaar (2005). Journal of Agricultural Economics (56: 135-144).

 These figures do not take into account the human health costs associated with zoonotic disease or the welfare implications of ill health for both humans and animals.

2. Reduce calving period

A simple move like reducing the calving period can have considerable benefits to output production costs and ease of management. At the same level of calf performance reducing the calving period from 15 to 12 weeks increases sale weights by 10kg and sale age by 9 days, assuming the same sale date (Figure 1).

Ideally farmers should be aiming for a 10-week breeding season to maximise weaned calf output and minimise barren cull rate. Further benefits are that routine husbandry tasks and feeding regimes are simpler because batches of calves are of similar age. Benefits accrue when dehorning, vaccinating, creep feeding and re-breeding. A wide range in age of calves is an important factor contributing to calf health problems.





Figure 1 Weight at weaning according to length of calving season

Herds with tighter calving periods perform better compared to herds with longer calving periods. A prolonged calving period also reduces the number of suitable heifers replacements that can be kept to calve just before the start of the main calving period because they will not be heavy enough at service.

The target should be 95% of cows and heifers calving within a 9 week breeding season and 65% of the herd to calve within the first 3 weeks of the season (Figure 2).

Figure 2 Target % of herd calving during the calving season



A compact calving period results in fewer calving difficulties, improved calf health and growth, and improved overall enterprise efficiency, because all cows and calves are at a similar stage of development at the same time.

The objective for your suckler herd should be:

To calve the herd over a short season (9-10 weeks) at the same time each year and wean one healthy calf per cow put to the bull.

The key to compact calving is:

- 1. Good management of cow body condition throughout the season
- 2. Avoidance of calving problems through good cow management and sire selection
- 3. Good management of stock bulls to optimise fertility
- 4. Attention to detail with management of heifers and first calvers

	Spring calving herds	Autumn calving herds
Calving	2-2.5	3.0
Mating	2.5	2.5-3
Turnout	2.0	2.0
Housing	3.0	2.5-3

Target condition scores for beef cows and heifers

Breeding cycle

The aim is for every cow to produce a calf every 12 months, to achieve this she must rebreed within 80 days of the birth of her last calf (Figure 3). It is estimated that the cost of a calving interval extending beyond 365 days is £1 per day – costing £30 per month.

285 days gestation + 80 days to rebreed = 365 days in year

Commercial herds should be aiming for calving indexes between 365-375 days (average number of days between calvings for all cows).

Figure 3 The Breeding Cycle



Pregnancy scanning cows at weaning or before to determine whether they are pregnant enables cows to be managed according to calving date and those found to be barren early can be moved to an autumn calving group or sold. This avoids the cost of keep cows that are not pregnant and keeping bulls in with cows too long, subsequently extending the calving season and risking heifer calves being served by the bull.



3. Increase cow longevity

Suckler cow breed type

In a commercial suckler herd the crossbred cow has many benefits over a pure bred cow. The objective of all crossbreeding systems is to optimise the use of hybrid vigour and breed differences to improve reproduction, longevity and disease resistance.

Deciding which breeds to choose will depend on the most suitable mature body size for cows on your farm, the desire to maximise hybrid vigour and the combination of maternal and beef traits you are looking for.

It is important that the mature body size of the cow matches the feed resources available. Very large cows can be difficult to keep in good body condition because of their higher feed demand, and this will reduce fertility. Cow size will also influence the cost of feeding the cow during the year.

There are a number of crossbreeding systems that have been applied to beef breeding (Table 3). Breed differences tend to control growth rate, mature size and milk production. In practical farming, the value of hybrid vigour created by different systems needs to be weighed against the management effort to maintain the system. Sometimes it is difficult to avoid increasing the breeding of females to more than ³/₄ of one particular breed and therefore reducing the benefits from hybrid vigour and breed differences.

Table 3Predicted improvements in calf weaning weight per cow served for differentcross breeding systems (assuming equal performance).

Mating system	Relative weight of calf weaned per cow served
Pure bred	100
Two breed rotation	116
Four breed rotation	118
Half bred dam + terminal sire	123

Replacement policy

In order to maintain herd output and improve the genetic base of the herd it is vital to have a sound replacement policy in place. The first decision is whether to breed your own replacements or to buy them in. Table 4 lists some pros and cons of both options.

Table 4	Advantages and	d disadvantages	of buving-in	or breeding your	own replacements
	Advanages and	a uisauvainayes	or buying in	or breeding your	own replacements

	Advantages	Disadvantages
Home bred replacements	Of known breeding	May not be of the breeding desired i.e. maternal traits?
	Of known health status	May require the purchase of another bull – bull calves will be of lower value.
	Will be resistant to some on farm infections	Another batch of cattle to manage
	May provide a good batch of similar sized heifers	May be difficult to collect a batch of sufficient heifers if calving period is protracted
Bought-in replacements	May be bred from breeds with good maternal traits or from a desired bull.	May be of unknown breeding
	Can free up farm resources to allow more cows to be kept	Of unknown health status. TB testing/risk of transmission may be an issue
	All calves sired by terminal sire (not maternal sire)	May not have been exposed to same infections as on farm
	May be reared to higher standards.	May not be easy to collect a good batch of even heifers
		May not calve at desired time of year

Some herds use artificial insemination on a proportion of the herd to breed replacements, this way there is no need to buy a maternal bull and top quality genetics can be introduced cost effectively. Alternatively there are opportunities to work with other farmers so that one farm rears heifers for neighbouring suckler herds.

Culling non-productive cows

As well as sourcing good breeding females think about maximising the value of your cull cows by implementing an active culling policy, picking out cows that are no longer

productive members of the herd. Research has shown that cows are most productive between the ages of 5 and 10 years old. Cows older than 10 years consistently produce calves with lower weaning weights. In order to maximise returns from your cull cows market them at the correct fat level to suit buyers requirements i.e. fit not fat, trying to avoid troughs in the market price. Think carefully about the costs and likely returns from finishing cows and assess all the options:

- Sell culls immediately, if cows have sufficient body condition to meet market requirements
- Sell cows for further finishing
- Keep fit and healthy cows for finishing on farm, after drying off, if they need and will respond to extra feeding
- Feed selected cows extra during late lactation so they can be sold immediately after drying off.

See HCC's Making the Most of Cull Cows for more information on finishing & marketing cull cows.

4. Use high EBV terminal sires

The first thing to consider when choosing a bull is the type of cattle that you want to breed – if you are looking to breed replacements for your herd or you are rearing cattle tor slaughter. The characteristics you need to look for in your new bull depends on this (Table 5).

Bull to breed replacements	Bull to breed cattle for slaughter
Look for good maternal traits	Look for good beef production traits
Calving ease (maternal)	Calving ease
Birth weight	Birth weight
200 day milk	200 day growth
Fat depth	400 day growth
Mature size	Muscle depth
Longevity	
Physical soundness (legs, feet, back, teeth etc)	Physical soundness (legs, feet, back, teeth etc)
Breeding soundness (testicles, semen quality & quantity, libido)	Breeding soundness (testicles, semen quality & quantity, libido)

 Table 5
 Desired characteristics for different stock bulls.

When you are buying a bull, how can you tell if his calves will be born easily, if his calves will perform well under your system or if his daughters will milk well? It is impossible to make such a judgement by eye because what you are seeing is a combination of the bull's genetic potential and his management – but you are only buying his genetic potential!



Look for bulls that are supported by figures that can provide real information about his breeding potential. Estimated Breeding Values (EBVs) are calculated from the performance of the bull himself, his parents, relatives and his progeny. EBVs provide information about the bulls breeding potential for specific traits, e.g. calving ease of his calves, growth rate and muscle depth. EBVs are then used to calculate economic indexes such as Beef Value and Calving Value, to provide an overall economic assessment of the animal.

You also need to consider health status, physical soundness, semen quality and how he has been reared – all of which will determine how successful he is at getting your cows in calf. It is worth remembering that scrotal circumference is directly related to sperm output and that semen quality can be measured as part of a breeding soundness examination conducted prior to the breeding season.

In order to get the best out of your new bull gradually introduce him to his new diet and the health management regime for the herd when he arrives at the home farm. Implement management ahead of the breeding season to ensure that he is fit and mobile but not fat. Any foot care that is required should be carried out well in advance of the breeding season so that the feet will be fully healed. Taking good care of your bull will be repaid in a long working life and the spreading of purchase cost over more calves.

A young bull should not serve any more than 20 - 25 cows in his first season, whereas mature bulls can serve up to 40 cows or more. If high levels of repeats are observed check that the bull is actually serving cows and that he is fertile.

5. Reduce variable costs

Variable costs per cow inevitably vary from farm to farm but top producers can have variable costs that are £40 per cow less than average producers. The main difference is the feed and forage costs for both cows and calves. Making the most of forage through well-managed forage conservation and grazing can be highly cost effective. In general costs are lowest when grazing takes priority over conservation. Sward height is a very useful guide to grazing, silage making should not rule grass use.

Using cheap by-product feeds can offer considerable savings provided rations are formulated correctly. Knowing the value of any feed is essential. Silage, straw, straights, cereals and mixes should all be analysed to ensure they are fed at the optimum rate and in the correct combination. Body condition scoring of cows can reduce winter feed costs because cows are fed more accurately. Cows should be fed according to their body condition score to ensure that the thinner cows are adequately fed and that fat cows aren't overfed. This would lead to an overall feed saving.

See HCC's Practical Cattle Nutrition Guide for more information on feeding cattle.

Creep feed can easily cost more than necessary whether through using it for too long or making it too high in protein. Four to six weeks prior to weaning is usually long enough for creep feeding (unless conditions are extreme). Calves approaching weaning usually need extra energy not protein. Milk and grass supplies the protein needed but not the energy. A simple creep of rolled barley will work effectively changing to the finishing ration of 14% crude protein (CP) only in the final week or two before weaning.

6. Reduce fixed costs

Top performing herds can have fixed costs that are £50 per cow lower than average herds. Reducing fixed costs is often based on simplifying a system. Machinery, power and labour are significant costs that can be reduced by looking at alternative ways of wintering, feeding, bedding and managing your herd. Adlib feeders can significantly reduce the labour and machinery requirement of feeding finishing cattle. Whilst grazing dry cows on brassicas during the winter can substantially reduce wintering costs. Using contractors instead of buying machinery and cooperating with neighbouring farmers to buy machinery are options worth considering. As well as reducing fixed costs think about spreading costs across greater output; more cows, more calves or additional enterprises.

2005/06	All farms	Top third	Bottom third
	(average)	(low cost)	(high cost)
Total Fixed Costs p/kg LW	98	69	137

7. Conclusions

The key to maximising net margins is optimising output value in relation to production costs. Fertility of heifers, cows and bulls are the key to suckler output and require prebreeding checks, well-chosen stock bulls (or semen), proactive herd health management, well planned herd nutrition and a compact calving period. Finally, all this needs to be incorporated into a planned production system focused on cost control.

Appendix 1 - Condition Scoring

Condition scoring should be used to monitor changes in nutritional status so that cows are in the right body condition at key times of the year.

The technique is to grip the loin halfway between the hip (hook) bone and the last rib. The fingers are placed on top of the loin pointing towards the mid-line. The thumb curls round the ledge formed by the transverse processes of the spine to feel the fat cover over the tips of these processes (Figure 1).





Score	Condition	Detailed description
1	Poor (very thin)	Deep cavity around tail head with no fatty tissue under skin. Spine prominent and horizontal processes sharp. Ribs sharp with no fat cover.
2	Moderate	Shallow cavity around tail head but pin bones prominent; some fat under skin. Transverse processes can be identified individually with ends rounded. Ribs can be identified individually but feel rounded rather than sharp.
3	Good	Fat cover over tail head area, pelvis can be felt but only with firm pressure. End of transverse processes can be felt with pressure; only slight depression on loin. Individual ribs can only be felt with firm pressure.
4	Fat	Tail head completely filled and folds and patches of fat evident but soft to touch. Cannot feel transverse processes and have completely rounded appearance. Folds of fat developing over ribs.
5	Grossly fat	Bone structure of animal no longer noticeable. Tail head almost completely buried in fatty tissue. Pelvis impalpable even with firm pressure. Ribs covered with thick layer of fat.