



**Making the Most of your  
Finishing Beef Cattle**

## **Introduction**

Hybu Cig Cymru/Meat Promotion Wales (HCC) was established in April 2003 and is the strategic body for the promotion and development of the Welsh red meat industry. Its mission is to develop profitable and sustainable markets for the benefit of all stakeholders in the supply chain.

It brought together the red meat activities of three organisations, namely the Meat and Livestock Commission in Wales (MLC Cymru), Welsh Development Agency and Welsh Lamb and Beef Promotions Ltd. Each organisation was responsible for different aspects of red meat activity, which have now been integrated into HCC's work.

HCC is now the sole body for the promotion and development of red meat in Wales.

This booklet forms part of a series of publications produced by HCC's Industry Development Team.

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## Measuring performance

Which of the many measures available actually gives the true picture of the efficiency of a beef finishing enterprise?

When looking at economic and technical efficiency, it could be the number of calves successfully finished, the average weight of finished cattle, the amount or cost of feed or even the sale price achieved per beast.

**But there is only one measure which takes into account all elements of production and that is the margin achieved from each 1kg of finished beef per year.**

This will include start and finish weights, growth rates, losses, feeding costs and can even include the effect of subsidies.

## Average performance

Performance recording data can be used to establish the costs of average finishers. For two examples of a 90-head steer-finishing unit using continental-dairy crossbreeds the figures stack up as shown in Table 1.

**Table 1. Costs and margins in beef finishing**

<b>Finishing age (months)</b>	<b>22-24</b>	<b>28-30</b>
Calves reared	100	100
Start weight (kg)	115	115
Finishing weight (kg)	650	650
Feeding period (months)	21	27
Variable costs per head (includes calf purchase)	495.10	532.36
<b>Production Costs £/kg</b>	<b>0.76</b>	<b>0.82</b>
<b>Sale Value (£/head) at 95p/kg</b>	<b>617.50</b>	<b>617.50</b>
<b>*Annual cattle throughput per 100 places</b> (number of cattle finished per year per 100 places)	<b>67</b>	<b>50</b>
<b>Gross Margin (£/head)</b>	<b>127.00</b>	<b>89.74</b>
<b>Gross Margin (£/kg)</b>	<b>0.19</b>	<b>0.13</b>
<b>*Gross Margin per kg/year (£)</b>	<b>0.13</b>	<b>0.07</b>
<b>Gross margin per year for 100 steers (£)</b>	<b>8,190</b>	<b>4,225</b>

*\* Assumes sales at 18 and 24 month intervals respectively with 3 month overlap between batches*

Clearly the gross margin is better for the shorter production system. The only real difference between the two systems is the management of feed supplies to hit target growth weights. The shorter production system reduces costs through improved animal performance. Within a 24 or 30-month production system improved animal performance will increase the margin. **But you can really make great potential gains in margin by moving from a 30-month to a 24-month system.**

## **Increase weight gain at grazing**

Grassland management is critical to good performance. The key elements are, in the short term, controlling grazing pressure and cutting for conservation in a co-ordinated way. In the long term fertiliser application, soil fertility and choice of ley are important. In practice, fertiliser application is rarely a problem once you have a plan, but harvesting grass can be difficult to get right - especially grazing.

Measuring sward surface height and altering stocking rates accordingly makes optimum use of grazed grass by ensuring good intakes and keeping the feed value of grass high. On set stocked paddocks the greatest animal growth per hectare is achieved at a sward surface height of 6 cm and the greatest growth rate per animal at 7-9 cm. This is much shorter grass than many people are used to, but in this case length is not an advantage - longer grass will be increasingly stemmy, have a lower digestibility and lower intake characteristics. Put simply long grass is a poorer feed.

If grass growth gets ahead of the cattle (sward surface height more than 9 cm) then reduce the area available with electric fencing and take a cut of silage or hay from the excess. If the sward height dips below 6 cm then increase the area available using silage ground if necessary. It is nearly always cheaper to use grazed grass at the expense of winter forage. Buying-in feed for the winter is usually much better value than making more silage.

**Manage sward height and achieve growth rates of 1kg/day. Look at the grass your animals are eating and measure it twice a week. Worth 6p/kg extra margin when comparing average and top third producers- that's £1080 in a grazing season for 100 steers.**



## Analyse forage and formulate rations

Making the most of forage through a well-managed plan of forage conservation and grazing can be highly cost effective. In general costs are lowest when grazing takes priority over conservation. Silage making should not rule grass use - but once you have made silage it pays to know its feed value and use it effectively.

Compare the performance of steers fed two silages (23% DM) of different feed quality (see Table 2). Target winter growth rate for the steers is 0.8 kg/day. To meet the target of 0.8 kg/day the moderate silage would require 2.5 kg/day of a barley/protein supplement and the better silage only 1.25 kg/day of supplement. Financially the good silage supplemented at 1.25 kg/day would leave a margin £21 better per beast than the moderate silage supplemented at 2.5 kg/day. This clearly indicates the value of good silage.



Perhaps even more important is the fact that if no supplement was given to the good silage there would be a £13 reduction in margin – equivalent to 9p/kg gain. If the moderate silage received no supplement then the margin would be reduced by £19 - equivalent to 13p/kg.

**Table 2** Response to silage supplementation

Silage ME	Start Weight (kg)	Target Growth rate (kg/d)	Growth rate (kg/d)		
			No supplement	1.25kg	2.5kg
Moderate 10.0 MJ/kg	340	0.8	0.36	0.61	0.80
Good 11.4 MJ/kg	340	0.8	0.58	0.82	0.97

**Analyse silage and supplement appropriately. This may increase margin by as much as 8p/kg when comparing average and top third producers - that's £1150 in a winter season for 100 steers.**

## Finish calves sired by a bull of high Beef Value

An animal in a field, finishing yard, sale ring or show ring is showing the combination of two things, the way it has been reared and the genes its parents gave it. When looking for a sire to breed high quality progeny, the genes are the key to success. Breeders of beef cattle have at their disposal a statistical programme called the Best Linear Unbiased Prediction (BLUP) system, a powerful tool that allows breeders to make better choices about which bulls to use.

The BLUP method uses all available information on all recorded relatives from an animal's parents and progeny to cousins, aunts, brothers and sisters. This includes pedigree information, how animals are related to each other, and the performance records (weights and measurements) that have been kept for all those animals. The analysis calculates Estimated Breeding Values (EBVs) for economically important traits to provide an assessment of the genetic merit of the animal.

Two economic assessments are calculated, using the EBVs namely the Beef Value and the Calving Value. The Beef Value and Calving Value are the overall balanced assessment of the economic value of an animal for beef production. High positive values indicate the sire that is more commercially valuable for both Beef Value and Calving Value.



The effect of finishing calves sired by a bull of high Beef Value is to increase growth rates and shorten the finishing period. When purchasing dairy-bred beef calves or stores from a suckler herd the Beef Value of the sire will be a big factor in determining how well the cattle perform during finishing.

**Progeny from a top 1% bull finish 1 month earlier with feed savings of £30 worth 5p/kg in improved margin – that's £3000 over a finishing period for 100 steers.**

## Sell at the right time

Finishing cattle with the right level of fat cover is a crucial to getting the best returns from a beast. Carcasses which grade fat-class 4H can be penalised between 5 and 8 pence per kg compared with a carcase grading fat-class 3.

There is a double penalty at work here when you consider that the over-finished carcase is penalised by the buyer and there is a cost to the producer in terms of time and feed to produce the unwanted extra fat which is then trimmed off.

**Table 3**

Live Wt (kg)	Carcase Wt	Fat Class	Extra days to finish	Extra feed kg DM	Carcase Value (£/kg)	Carcase income (£)	Extra cost (£)	Change in margin (£)
600	300	3	-	-	1.70	510	-	
650	325	4L	40	450	1.65	536	45	-19

**Cattle finished at Fat Class 3 rather than 4L improve margin by 3p/kg LW. For 100 steers finished at 650 kg liveweight that's worth £1950.**

**Table 4 - Costs and margins for top performing finishing herds**

Management Changes	Value p/kg finished steer	
	22-24-month	28-30-month
Average performance variable costs (p/kg LW)	76	82
Increase weight gain at grazing	6	6
Analyse forage and formulate rations	8	8
Use a terminal sire of high EBV	5	5
Sell at the right time	3	3
<b>Possible variable costs p/kg LW</b>	<b>54</b>	<b>60</b>
Income p/kg LW	95	95
<b>Margin p/kg/year</b>	<b>27.2</b>	<b>17.5</b>
<b>Gross Margin/year 100 steers at lower variable costs</b>	<b>£17,680</b>	<b>£11,375</b>

**Table 5 Gross margin per year for 100 steers**

Variable costs	Age at finishing	
	22-24 months	28-30 months
Average	£8,190	£4,225
Possible	£17,680	£11,375

## Conclusion

There are two clear messages from these figures:

1. Within a system you can significantly reduce production variable costs on 100 steers using the tools available by £9,400 in a 24-month system and £7,100 in a 30-month system. This means an average producer could increase his margin by as much as 14p/kg or £92 per head.
2. Moving from 30 to 24 month finishing means turnover can be increased making the gross margin on a 100 head steer enterprise better by over £3,900/year at average variable costs and £6,300/year at possible variable costs. (Tables 4 and 5).

## Summary

- Aim to finish cattle at 22-24 months rather than 28-30 months
- Increase weight gain at grazing by managing sward height
- Analyse forage and formulate rations
- Finish calves sired by a bull of high Beef Value
- Sell at the right time to achieve best carcass value

## Further information

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