



For the weaner and finisher stages, feed is the highest single cost of rearing each pig (around 60% of total cost). Labour and buildings combined are typically the next highest, at about 20% of total costs. Ensuring your pigs utilise feed efficiently and grow quickly through the weaner and finisher stages is important for securing a competitive net margin.



#### Rearing herd (7–35 kg):

- **Daily Liveweight Gain (g/day):** aim for 480+
- **Feed Conversion Ratio:** aim for 1.4 or better
- **Post Weaning Mortality:** aim for 1.8% or less

Based on top 10% national figures 2009

### Daily liveweight gain

- Daily liveweight gain (DLWG g/day) tells you how quickly pigs are growing by describing the average increase in the weight of a pig each day.
- Pigs grow at different rates, depending on their age, weight, and number of other factors.
- To obtain useful information from DLWG figures you need to know the weight range across which it is being measured.
- Good sources of comparative data can be found in the BPEX Pig Yearbook and national pig recording schemes.
- Many businesses subdivide their herd into rearer (typically 7 kg to 25/35 kg) and finisher (typically 25/35 kg to 100 kg) stages. Some further subdivide and look at their grower stage separately (typically 25/35 kg to 60 kg).
- Subdivision is useful as excellent finisher stage performance can mask poor rearer growth rates (and vice-versa), where daily liveweight gain is only measured across the whole herd, resulting in valuable signals regarding the potential for improving herd performance being missed.



Using a recording system, such as Agrosoft, will ensure that you receive regular updates on the DLWG of your herd; you can also assess DLWG yourself:

To estimate daily liveweight gain from approximately 35 to 100 kg	Example average herd	Example top third	Your herd
(A) Carry out a monthly stocktake over 6 months to record the number of growing pigs on the unit between approx. 0 and 100 kg. Calculate the average by dividing the total by 6.	2200	1968	
(B) Record the number of finished pigs sold each week over 6 months. Calculate the average by dividing the total by the number of weeks recorded.	175	168	
(C) Calculate the growth period in weeks by dividing the average number of pigs on the unit by the average number of pigs sold each week (A/B).	12.6 wks 12.6 wks	11.7 wks 11.7 wks	
(D) Calculate the growth period in days by multiplying the number of weeks by 7 (Cx7)	88 days	82 days	
(E) Record the start weight of the pigs preferably by weighing a representative sample of pigs every month	35 kg	35 kg	
(F) Record average deadweight over a 6 month period	76 kg	76 kg	
(G) Estimate or calculate the killing out %	75%	75%	
(H) Estimate sale liveweight by dividing deadweight by the killing out percentage and multiplying by 100 (F/G x 100)	101 kg	101 kg	
(I) Estimate liveweight gain by subtracting the start weight from the end weight (H-E)	66 kg	66 kg	
(J) Estimate average DLWG by dividing liveweight gain by the number of days growth and multiplying by 1,000 (I/D)	750 g/day	805 g/day	

Once you have your first 6 months of data, you can track changes each month by deleting data from the earliest month and adding data from the latest month to A and B and recalculating. DLWG for other weight ranges eg weaning to 30 kg, can also be estimated using this method.

To help you decide how well your unit is performing, compare your growth rates with others. Remember for the comparison to be helpful you need to compare like with like, so find data for pigs that are growing across broadly the same weight range as your pigs. It can also be helpful to compare with pigs reared in similar production systems (e.g. compound feeders or home mixers). Once you have a feel for how your pigs compare, you and your team can benefit from setting your own targets for what you can realistically achieve. Each month you can then match your performance against your targets; if you are on target – good news. The message to the team is to keep the good work up, and the focus should be on continuing to monitor performance and trends. If you are below target the priority is to identify the reasons, and work to resolve these.

BPEX Pig Yearbook 2008	Home mixers		Compound feeders		Your herd current performance	Your targets
	Average	Top third*	Average	Top third*		
Rearing herd						
Weight in (kg)	7.5	7.8	7.0	7.3		
Weight out (kg)	35.7	34.0	35.5	41.8		
DLWG (g/day)	466	422	437	505		

\*Selected on feed cost per kilogramme live weight gain

BPEX Pig Yearbook 2008	Home mixers		Compound feeders		Your herd current performance	Your targets
	Average	Top third*	Average	Top third*		
Finishing herd						
Weight in (kg)	28.8	31.8	38.0	35.3		
Weight out (kg)	100.5	102.4	97.3	102.8		
DLWG (g/day)	705	746	768	863		

\*Selected on feed cost per kilogramme live weight gain

## Improving DLWG

If DLWG in your herd is low compared to comparative data and the targets you have set yourself, there is an opportunity to improve to herd profitability. Identify what would give you the best return for the effort you and your team expend, and put this into action. This could involve:

- Improving health
- Improving genetics
- Improving access to feed and fresh water
- Improving feed hopper management
- Less mixing of pigs and reducing stress
- Increasing space allowance per pig in a cost effective manner
- Improving the physical environment including thermal, stocking density, environmental enrichment

Further information can be obtained from *Action for Productivity* sheets 9, 11, 15, 18 and 21.

## Rearing pigs

- Faster growth during the rearer stage results in both accommodation and feed being used more efficiently.
- Under certain circumstances an increase in growth rate can, however, put pressure on accommodation eg if an increase in rearer growth rate is not matched by faster finisher growth it may not be possible to free up pens to allow transfer of rearers to the finisher herd at an earlier age.
- Monitoring and managing stocking rate is important to ensure improved growth rates are not compromised by overcrowding.

## Finishing pigs

- In general faster growth rate will have a positive impact on FCR and feed cost/kg liveweight gain, and reduce the amount of accommodation required.
- However for some genotypes faster growth rate can lead to fatter pigs. This can have two downsides:
  - A higher (worse) FCR, as it takes more feed to produce fat than lean tissue.
  - A reduction in the price per kilogramme deadweight if an increased number of pigs fall outside the higher grades of the contract.
- If growth rates are good but backfat measurements are too high for the contract specification you need to decide on the best way forward:
  - Talk to your nutritionist about changing feed specification towards the end of the finishing period to control backfat.
  - Consider marketing at a lighter weight.
  - Consider modifying the genetics of your herd.
  - Find a less demanding contract which allows you to maximise pig growth rate and sale weight.



## Feed Conversion Ratio

- A second measure you can use to assess the performance of the herd is Feed Conversion Ratio (FCR).
- FCR tells us how many kilogrammes of feed are being used to produce each kilogramme of liveweight gain.
- If the number of pigs, or the stock of feed stored on the unit, has changed substantially during the finishing stage it will make the FCR estimate less accurate. You can correct this by making an allowance for changes in stock take of feed, pig numbers and average pig weight.
- FCR varies with pig weight; smaller pigs typically have a better (i.e. lower) FCR than heavier pigs; so compare like with like.

**You can estimate FCR for the rearer, grower or finisher stage using the following equation:**

$$\frac{\text{Tonnes of feed delivered over 6 months} \times 1000}{\text{Number of pigs sold or transferred over 6 months} \times (\text{weight out kg} - \text{weight in kg})}$$

$$\text{For example: } \frac{672 \text{ tonnes of feed} \times 1000}{3770 \text{ pigs} \times (101 \text{ kg} - 35 \text{ kg})} = 2.70$$

### Feed Conversion Ratio (continued)

- A high FCR indicates that a lot of feed is being used to produce each kilogramme of live pig, it can result from:
  - Physical loss of feed before it even reaches the pig eg. through wastage via slats, birds, vermin, discarded mouldy feed.
  - Pigs being fed a diet that is not suitable for their needs
  - Pigs not using suitable feed efficiently eg. because of poor environment or poor health.
  - Pig deaths; as feed eaten prior to their death will have been included in the FCR
- To improve FCR you need to determine which of the above is having the largest negative impact on FCR and/or which can most readily and cheaply be corrected; concentrate your effort in these areas.



Feed lost through the slats will increase FCR

FCR can have an important impact on herd profitability. Improving FCR from average (2.87) to top third (2.61) performance, over the weight range of 35 to 100 kg, could improve net margin on a 350 sow herd by over £22,000 given an average grower/finisher feed cost of £260/tonne.

However, FCR should not be looked at in isolation. You also need to consider the cost of each kilogramme liveweight gain. To calculate this multiply FCR by feed cost (£/tonne) and divide by 10. Example:

	Start weight kg	End weight kg	FCR	Feed cost £/t	Feed cost p/kg lwg
UNIT A	35	100	2.73	260	70.9
UNIT B	35	100	2.81	240	67.4

- Unit B has a higher (worse) FCR, but feed cost per tonne is lower and the cost of feed to produce each kilogram liveweight gain is less. So which unit is performing better?
- From the information presented here we would say Unit B. However to make a final decision we need to know the average liveweight gain, and the resources and cost structure of the unit.
- A unit which has an abundance of low cost finisher accommodation may be less concerned about maximising growth rate, provided growth is achieved at a low feed cost per kilogramme.
- A unit where the finisher accommodation is both expensive and limited, and low growth rates result in overcrowding or forces the early sale of finished pigs, will be much more concerned about maximising growth rate, even if it requires a higher feed cost per kilogramme liveweight gain.
- If cheaper feed is leading to a slower growth rate, which is in turn putting pressure on accommodation or forcing sale at a lower weight, then a 'what if' analysis should be done to quantify if Unit B is actually achieving any benefit from feeding a cheap diet.
- It may pay to improve the feed specification even if cost per tonne and cost per kilogramme liveweight gain is increased.

### Post weaning mortality

The third measure that can help you find out how well your unit is doing is post weaning mortality. Post weaning mortality tells you how many pigs are dying between weaning and sale; mortality at this stage is often associated with disease.

$$\text{Mortality} = \frac{\text{Number of deaths over 12 months} \times 100}{\text{Numbers pigs transferred into the unit over 12 months}}$$

- When recording deaths it is useful to record the age and weight so that you can concentrate action for improvement at the correct stage.
- It is not only demoralising to lose pigs at this stage but it is expensive as you have already incurred breeding and feeding herd costs.
- Work with your veterinary surgeon to tackle any disease, whilst ensuring that stock management and the facilities provided do not exacerbate any underlying disease conditions.

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