

Right measures needed to boost efficiency

With feed costs at record levels, this is the time to reconsider how you assess flock performance. Cobb's *Matthew Wilson* takes a look

Matthew Wilson



Rapidly increasing feed and energy costs has prompted many poultry companies to focus more on production efficiency. But many individual companies are using the wrong measure and are subsequently missing out on profits.

Efficiency, typically gauged by analysing key performance indicators (KPI) such as chicks per hen, average daily weight gain, feed conversion and yield statistics, can give an accurate indication of production performance and progress, but not a good understanding of costs.

Many companies use the Production Efficiency Factor (PEF), which will give an index of performance on a flock-by-flock basis.

PEF allows you to compare individual flocks and understand the impact of changes in KPIs such as average daily gain, livability and feed conversion. But it does not

link cost or the company's market or customer requirements with production.

Most companies have to meet customer-determined product weight ranges or specific target weights. Weights outside these limits may not be accepted if too low, or sold as "give way" if too high. So in the current market, both options are expensive when not generating revenue against the costs incurred.

The practical way to increase profitability is to reduce the cost per kg of liveweight produced, but this is often a conflicting consideration when focusing primarily on PEF. The result is that the drive to maximise broiler performance and production may not always be the most cost-effective strategy.

With high feed costs, and feed typically accounting for about 70% of the total live production cost, feed conversion becomes an obvious target.

The relationship between feed cost per kg of liveweight produced and feed conversion depends on nutrition density and the ability of the bird to use feed for growth. A chicken eats to energy requirements.



High feed costs may require a change in how you assess flock performance

Broilers with high feed intake tend to over-consume energy when fed high density diets. Over-consumed energy increases fat deposition, fat reduces yield and this lower yield cuts company bottom-line performance.

So let's explore the options of reducing diet density and see how

this affects KPIs and cost with the current high feed costs. Data show that while feeding a lower energy ration will lead to a lower performance and yield, there is a cost and margin over feed advantage (table 1) with this feeding strategy.

The next stage is to look at how a 1% improvement in all of the key

TABLE 1: EFFECTS OF FEEDING A LOWER DENSITY DIET

PARAMETER	STANDARD DENSITY DIET	LOW DENSITY DIET
Weight (g)	2,279	2,255
Feed intake (g)	4,000	4,180
Feed conversion	1.76	1.85
Breast meat (g)	402	399
Breast meat (%)	17.6	17.7
Abdominal fat (g)	45.8	40.2
Abdominal fat (%)	2.01	1.78
Feed cost (£/kg liveweight)	0.65	0.63
Revenue (£/kg)	1.09	1.08
Margin over feed cost (£/kg)	0.436	0.45

TABLE 2: VALUE OF 1% IMPROVEMENT IN VARIOUS FLOCK PERFORMANCE MEASURES

PARAMETER	PERFORMANCE	1% IMPROVEMENT	VALUE (P/KG LIVELWEIGHT)
Eggs/hen housed	153 (60 weeks)	1.53	0.083
Chicks/hen housed	130 (60 weeks)	1.30	0.104
Age at 2.4 kg weight	40	-0.40	0.200
Feed cost (£/t)	230	2.30	0.403
Feed conversion	1.75	-0.0175	0.403
Eviscerated yield (%)	70	0.70	0.910
Breast yield (% of liveweight)	20	0.20	0.520

“ The practical way to increase profitability is to cut cost per kg of liveweight produced”

performance indicators (table 2) equates in improved value on a p/kg basis if the company was to achieve this improvement using certain assumptions (table 3). The top factor is eviscerated yield with a benefit of 0.91p/kg of liveweight produced.

Then by applying this same economic value of 0.91p/kg to each of the listed yield, production and cost measures, we can calculate the percentage improvement and KPI performance required to equal that economic performance (table 4) and then comment on how improvement could be realistically achieved. This will identify the strategy to best assist the company in pursuing improved production efficiency and cost.

The 1% lift in eviscerated yield equates to the benefit seen with a

TABLE 3: ASSUMPTIONS USED IN CALCULATING FIGURES IN TABLE 2

ASSUMPTIONS	
Age (days)	40
Weight (kg)	2.4
Chick cost (£/chick)	0.25
Housing cost (£/kg)	0.20
Feed cost (£/t)	230
Feed conversion	1.75
Whole bird price (£/kg)	1.30
Breast meat price (£/kg)	2.60

2.26% reduction in feed cost. Although this might not seem a large improvement, it represents a £5.19/t saving and is well supported by the low density feed strategy (table 1).

Another advantage of the low energy density feed strategy is that the benefits can be rapidly seen being introduced for the next flock, representing the best option to improve performance and cost, particularly if

TABLE 4: CALCULATED IMPROVEMENTS NEEDED IN VARIOUS FLOCK MEASURES TO EQUAL A 1% IMPROVEMENT IN EVISCERATED YIELD

PARAMETER	VALUE (P/KG LIVELWEIGHT)	% IMPROVEMENT	KPI IMPROVEMENT
Eviscerated yield (%)	0.91	1.00	0.70%
Breast yield (%)	0.91	1.75	0.35%
Feed conversion	0.91	2.26	-0.04
Age at 2.4 kg weight	0.91	4.55	- 1.82 days
Chicks/hen housed	0.91	8.75	11.4
Eggs/hen housed	0.91	10.96	16.8
Feed cost (£/t)	0.91	2.26	-5.19

Definition of the Production Efficiency Factor (PEF)

■ PEF = flock livability x average liveweight/average kill age/feed conversion x 100

breed is taken into account.

In contrast, achieving the improvements in table 4 will take much longer. A 0.7% improvement in eviscerated yield will take up to three years' genetic improvement and the same period for a 0.35% improvement in breast-meat yield, a reduction of 4 points in feed con-

version will take over two years, 1.85 fewer days to reach the same weight will take over two-and-a-half years, while an extra 16 eggs and 11 chicks is a long-term goal.

■ Matthew Wilson is a broiler specialist with the Cobb world technical support team

Matthew Wilson graduated from Mellows College Galway Ireland in 1991 in poultry production as 'student of the year'. His early career began as broiler fieldsman in Ireland, before moving to Hamish Morrison as assistant broiler farms manger and then from 1996-2001 worked for ABN (formerly Yorkshire Country feeds) as national broiler specialist.

Matthew joined the Cobb World Technical Support Team in 2001 as world technical broiler specialist where he works with Cobb distributors, customers and technical managers to optimize performance and economic benefit of Cobb products around the world.



Above: Chicks being weighed in at the start of another trial, with company veterinarian Allan Ball (left) and Euan Meldrum, regional marketing manager

Below: The Cobb commercial broiler trials farm at Henley, in the UK



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