Institute of Organic Training & Advice

Results of Organic Research: Technical Leaflet 2

Financial Performance, Benchmarking and Management of livestock and mixed organic farming

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Introduction

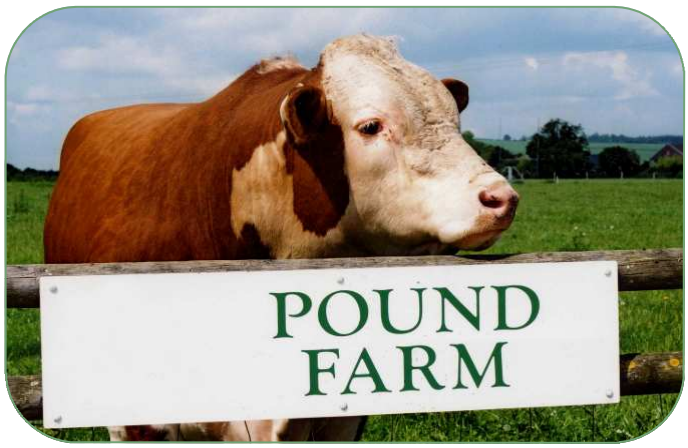
The successful financial performance of organic farms is dependent on a combination of premium prices and the development of efficient and productive low cost structured business. The development of such businesses is dependent on a good understanding of the profitability of organic businesses, the use of benchmarking to determine low cost systems and the analysis of an individual farm's physical and financial performance to improve financial returns.

This Technical Leaflet draws on the results of a number of different sources of information and research including the Farm Business Survey and the Organic Farming Survey (OFS). However, given the small proportion of farms which these surveys represent, care is needed in matching individual farms to comparable data-sets and interpreting the results.

This Leaflet provides average data and an indication of how the more profitable farms are achieving their results, which is a useful starting point against which to benchmark an individual farm. However, some successful businesses will be operating different systems with objectives which will not be comparable to the benchmark data.

Not revealed by these surveys are some good examples of organic farms that have developed systems that are generating returns that may be better than anything recorded in conventional situations.

A premium price is key to the success of many organic businesses. However, the ability to obtain a reliable premium price is not guaranteed as market conditions alter. Premium prices help compensate for the lower level of stock and the inability to dilute overhead costs. Developing lower cost sustainable systems is proving a challenge for many producers as in many cases it requires radical change to established business systems. Low input systems with less capital invested and a reduced reliance on purchased inputs are likely to fare better when prices are squeezed. This is particularly likely where the sector becomes over supplied, as has been the case in the past with the dairy sector and is currently (2009) the situation with beef and lamb. The alternative scenario demands that producers get significantly closer to the consumer and are able to command a greater proportion of the retail spend.



This Technical Leaflet is one of a series commissioned and prepared by the Institute of Organic Training & Advice (IOTA) as part of its Defra-funded PACARes (Providing Access, Collation and Analysis of Defra Research in the organic sector) project. The PACARes project aims to improve awareness and uptake of organic research by farmers. For more information go to www.organicadvice.org.uk/pacares.htm

The Leaflets aim to provide a summary of the key practical recommendations for organic farming, drawing on the findings of research including IOTA's own Research Reviews commissioned for the PACARes project. Other Leaflets in the series include: Composting, Dairy Cow Nutrition, Nutrient Budgeting, Organic Beef and Sheep Nutrition and Soil Analysis.

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Outputs: Agri-environment support and the Single Payment

Table 1: *Levels of environmental and total support received by organic farms as reported by the Organic Farm Survey.*

Product	Environmental support	Total support	Total % of output	SFP as % output
Milk (ppl): Organic	0.6	3.4	10.73	8.8
Conventional	0.5	4	15.50	13.6
Breeding beef (p/kg/LW): Organic	180	455	78.86	47.7
Conventional	100	364	74.29	53.9
Trading beef (p/kg/DW): Organic	247	659	62.52	39.1
Conventional	64	380	58.10	48.3
Lamb (p/kg/DW): Organic	143	379	58.31	36.3
Conventional	54	222	49.44	37.4

In recent years, with the exception of dairy farmers, organic businesses have had a greater proportion of their income arising from agri-environment schemes and in some cases a greater proportion from the Single Payment Scheme (SPS) as well. This makes these businesses more vulnerable to expected changes in the SPS (Table 1).

Dairy herd

The organic herd is larger than the conventional herd and has increased faster in recent years but slowed in 2007-8.

Kingshay shows milk price increasing from 19.2ppl in April 2002 to 36.3ppl in October 2008.

The efficiency of milk production as shown by the yield from forage shows little change per cow over the last six years.

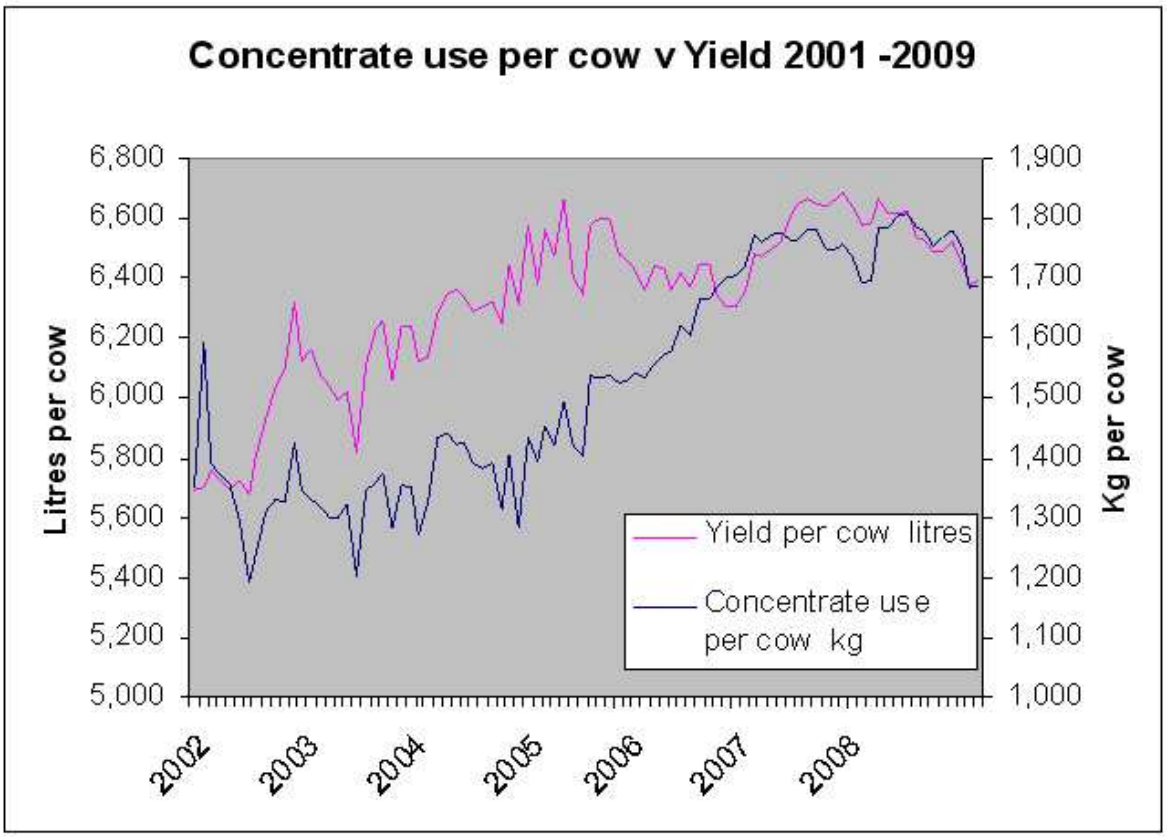
Table 2 (below) shows some of the key parameters as recorded by Kingshay over the last 6 years.

Table 2: *Organic dairy herd performance (Kingshay Dairy Manager).*

Annual rolling results	Year end Dec 2003	Dec 2004	Dec 2005	Dec 2006	Dec 2007	Dec 2008
Cows in herd	144	157	157	161	173	176
Cow calvings	100	107	104	113	119	123
Heifer calvings	32	38	37	38	39	37
% Heifers in herd	22.2	24.2	23.6	23.6	22.5	21
Yield per cow (litres)	**6,259**	**6,580**	**6,365**	**6,478**	**6,578**	**6,381**
% Annual yield/cow increase		5.1	-3.3	1.8	1.5	-3.0
Yield from all forage/cow (litres)	3,250	3,426	3,112	2,753	2,952	2,871

The increase in yield has come from increased concentrate levels as shown in Figure 1. This may well be a response to higher milk price as increased output dilutes overhead costs. Over the last three years concentrate levels have increased faster than yields, probably as a result of poor silage.

Figure 1: *Effect of Concentrate use on Yield.*



From December 2002, the proportion of milk income spent on concentrates increased from 19% to 26% and the expenditure on concentrates and forage increased from 8.5ppl to a projected 10.50ppl in 2009. Given the high costs of organic concentrates this trend can not be sustained with the current falling milk price.

Between 2006-7 and 2007-8 the milk price rose by about 5.0ppl but net margin only increased by 3.5ppl. This excludes Single Payment receipts but includes all agri-environmental scheme receipts.

The current (2009) costs of production have increased to 28.0ppl (Table 3). Projecting the net margins to 2009-10 shows falling returns but a net margin that is likely to be similar to 2007-8 returns.

The top performing dairy herds are typified by:

- Being large farms with bigger herds.
- Having marginally higher yields per cow.
- Spending less on concentrates and more on forage.
- Using more employed labour.

Table 3: *Costs of milk production 2006/07 to 2009/10 (pence per litre).*

Year	2006/7	2007/8	Proj. 2008/9	Est. 2009/10
Price/litre/kg	22.10	27.60	34.00	30.50
Total output	**22.80**	**28.30**	**34.70**	**31.20**
Feeds	5.00	6.50	8.45	7.10
Total variable costs	11.00	11.70	14.57	13.37
Labour	2.96	3.70	3.84	3.87
Fixed costs	9.26	10.10	10.64	10.71
Total costs	20.26	21.80	25.21	24.09
Net margin	**2.54**	**6.50**	**9.50**	**7.11**
Less family resources	3.04	3.00	2.80	2.66
Net margin after own resources	-0.50	3.50	6.70	4.45
Add Organic Farming Scheme	1.20	0.60	0.60	0.63
Net margin excl. SFP	**0.70**	**4.10**	**7.30**	**5.08**
Costs of production incl. Imputed costs	**23.30**	**24.80**	**28.01**	**26.75**

Sources: *OFS 2006/7 and 2007/8, projected and estimated forecasts based on Kingshay Dairy Manager 2008 and 2009-04-08. Note: costs of production include all family labour and costs of own capital but exclude receipts from Agri-environmental and Single Farm Payments.*

Beef and sheep

Between 2005/2006 and 2006/2007, output on organic lowland cattle and sheep farms increased by 29% to £792/ha, mainly on the back of rising fat cattle with income up 9% and other cattle numbers up by 9%.

The trend over the last three years (2006-2008) has been for beef cow and ewe numbers to fall by 5% and 6% respectively and for finishing beef numbers to increase (see Table 4 on opposite page).

The top performing beef herds are typified by being:

- Larger operators and selling a greater proportion of animals as stores suggesting that the producers were able to be more flexible in their management.
- Stocked at a higher rate by up to 40% higher in the 2005-6 survey.
- More predominately beef with less sheep.
- On average sold at a lower average weight but similar in 2007-8.
- Low cost feeders with feed costs of approximately 45% of the average, but they spend a greater proportion of total feed costs on forage and they use significantly less concentrate.
- Lower overhead cost operators, with approximately 55% of the average overhead costs. Power and machinery costs, including depreciation, are at 40% of the average.

Table 4: *Beef and sheep average costs of production in 2007-8 and projected cost and returns for 2008-9.*

	Breeding beef (liveweight)		Trading beef (deadweight)		Lamb (deadweight)	
	2007/8	2008/9	2007/8	2008/9	2007/8	2008/9
Price p/kg	118	118	317	300	266	300
Total output	**122**	**122**	**395**	**310**	**271**	**306**
Feeds	38	45	105	142	62	81
Other variable costs	37	37	42	42	77	77
Labour incl. family	112.1	147.1	155	155	115	115
Other fixed costs	23	23	230	230	164	164
Total costs	**211**	**252**	**532**	**569**	**418**	**437**
Net margin (incl. family labour)	-89	-130	-137	-259	-147	-131
Family's resources	185	185	320	320	155	155
Net margin incl. own resources	-274	-315	-457	-579	-302	-286
Organic Farming Scheme	180	180	247	247	143	143
Net margin excl. SFP	**-94**	**-135**	**-210**	**-332**	**-159**	**-143**
Costs of production incl. imputed costs	**396**	**437**	**852**	**889**	**573**	**592**

Source: *Organic Farm Income Results 2007/8 (Provisional).*

The on-farm measure of performance is often assumed to be the net margin plus the agri-environmental scheme receipts, in which case most enterprises break even. If the value of the families resources are included then the picture is reversed unless the Single Payment is included.

Upland Beef and Sheep

The Organic Farm Incomes reports highlight that between 2002/3 and 2006/7 the average upland farm area has increased from 124 UAA (Utilisable Agricultural Area) to 145 UAA and the business sizes from 27 ESU (Economic Standard Units) to 36 ESU. Since 2003/4 farm incomes have risen from £72,600 to £108,972 almost entirely due to increases in farm size as net farm incomes have remained almost static at around £130/ha. A breakdown of the output shows that support and agri-environment receipts remain the largest proportion of income at 42% of output (Table 5).

Table 5: *Proportional analysis of income for Non LFA farms.*

Income	%
Cattle sales	20.8
Sheep sales	20.5
Misc. income	16.1
Agri-environment	16.2
SPS	26.3
Total support	42.5
Total	100.00

Over the whole 2002-2007 period there has been little change in the stocking density or pattern of stocking with a stocking rate of about 0.9 LU/ha and an equal split between cattle and sheep. The long-term Redesdale project showed the importance of correct stocking levels and the integration of both enterprises if the quality of forage on the hill is not to deteriorate. The reduction in stocking rate was achieved by reducing ewe numbers which resulted in a greater proportion of cattle than previously. The project also showed that significant health benefits were derived from mixed stocking systems. The only health issue related to liver fluke and some targeted worming of lambs.

In the Redesdale project, the weight of lambs weaned per hectare averaged over a 10 year period between 53-90% of the conventional system. This was mainly down to lower stock numbers. The performance of the organic cattle was similar to the conventional system. The financial performance of the units showed that:

- It was possible to gain a premium price for store lambs by entering into an arrangement with a lowland finisher.
- When the Single Payment was included in the financial figures the gross margin was 15% above the conventional units.
- The gross margin for the organic cows consistently exceeded that of the conventional herd.

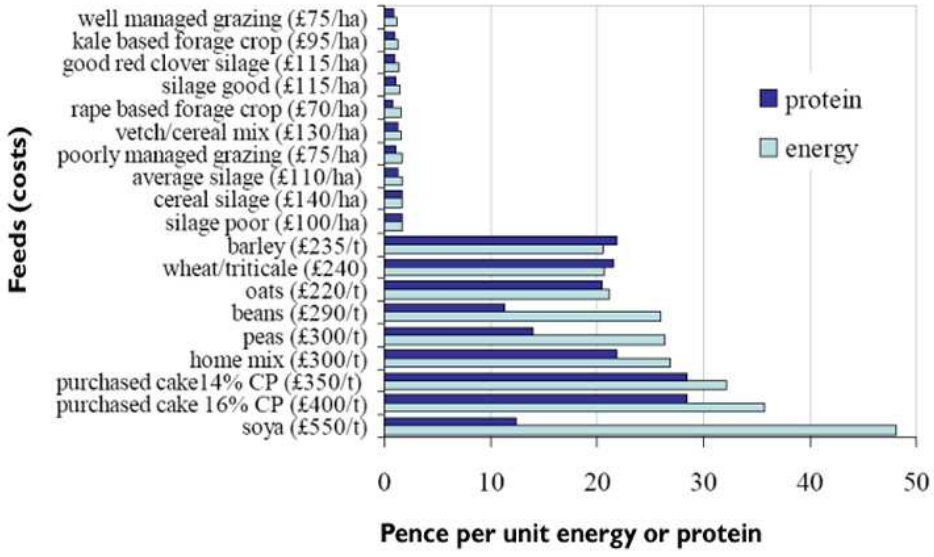
Driving costs down

The majority of organic producers selling into wholesale markets have limited control over the product price. Therefore, it is critically important that they focus on improving profitability through reducing the costs of production and by improving the efficiency of production or diluting overhead costs by producing more. This latter course is in many cases problematical as it may result in added variable costs and often poor performance over the whole enterprise.

Most producers would be better off trying to reduce costs of production. The range of costs highlighted by all surveys shows that it is possible for producers to significantly reduce almost any cost if they so wish. Benchmarking with similar businesses is a key point to enable farmers to see what is achievable.

One of the key areas identified by all top performing sectors is to focus on feed costs. Figure 2 below shows that the cost per unit of energy or protein varies enormously. Any grazed crop is the cheapest form of energy or protein followed by conserved feeds before the leap to the concentrate feeds.

Figure 2: *Comparative costs of energy and protein from organic feeds (Gillian Butler, Newcastle University, 2008).*



Making the most of grazing

Key Rules

- Breeds: select those breeds that utilise forage effectively and meet market requirements.
- Stocking rates: avoid over-stocking and consequently excessive use of purchased feeds; over stocking may also lead to health problems.
- Maximise grass re-growth: graze intensively for a short period, avoid compaction, choose correct seed mixture and manage soil nutrients carefully.
- Under grazing: this will limit re-growth and quality will suffer later in the season.
- Extended grazing: earlier and later in the season, monitor and measure to maximise performance.
- Investment: be prepared to invest in paddocks and tracks. This will enable extended grazing and more targeted use of grass.
- Deferred grazing: reserve grazing for later in the season. This is most suitable for low performing stock, dry cows or store cattle. A free draining site is required. Be prepared to move stock frequently.
- Grow other forage crops: these may have high nutrient requirement, so choose site carefully.

Making the most of silage

The need for supplementation depends upon silage quality and the expected performance of the livestock. Silage intake depends upon a number of factors:

- Digestibility and clover content: selecting the correct mixture and stage of growth at ensiling is the starting point.
- Mixed silages: either in combination with another silage, such as whole crop or well targeted buffer feeding will increase total feed intakes.
- Chop length: ensure minimum of 6cm to optimise rumen function.
- Ensiling: rapid clamping and proper sheeting with good consolidation of the clamp will ensure rapid and complete fermentation helping to reduce spoilage and avoid waste, leading to maximum intakes.
- Size of animal: can they realistically eat the amount of forage to achieve the desired growth rates?
- Trough conditions: is sufficient trough space available to avoid competition? Is the barrier appropriate in terms of height and distance from the feed?

Home grown cereals

The volatility of many organic feed prices makes it attractive for some organic farms to produce at least a proportion of their own concentrates, particularly cereals. The costs of production are likely to always be lower than purchased cereals and by growing on-farm the system is divorced from the market fluctuations. These cereals crops can be ensiled as a whole crop or combined at 30% moisture and preserved as crimped grain. Both systems avoid the need for the expense of drying and buildings or storage.

Overhead costs

Low cost systems require developing and may need initial capital expenditure (e.g. cow track and fencing). Enterprise size is important not only to ensure that overhead costs are controlled but also that specific enterprise costs can be contained. Balance within the organic system i.e. the ratio of sheep to cattle and arable to grassland, is fundamental to successful development of robust sustainable farming operations.

Power and machinery costs are often very high as a result of small scale. Contractors may be a better option, but not if quality is going to be reduced. The alternative may be to consider machinery sharing or contract farming part of the business. Joint partnerships where an operator is rewarded for doing a quality job have proved successful for a number of farms and may reduce the risk for both parties.

One of the key points to arise from the Organic Farm Incomes survey is that organic farms have less tenants' capital invested than comparable conventional businesses. Organic farms also tend to receive a greater proportion of their income from agri-environment schemes and Single Payment schemes, making organic business significantly less risky than comparable conventional businesses.

IOTA Technical Leaflet: Financial performance

Summary

- For all farm types, the profitability of average organic businesses is better than the equivalent conventional. However, upland and particularly lowland beef and sheep farms are often operating at a loss.
- The vast majority of organic businesses have less tenants' capital invested in them than comparable conventional businesses resulting in a higher return on tenants' capital.
- There is a wide range of financial performance in all organic sectors demonstrating the potential that exists for improvement.
- The price received is to some extent within the control of farmers. By producing what the market wants and pays for, in terms of quality and other specifications, farmers can improve their returns.
- For all livestock sectors it is importanft that farmers invest in producing the cheapest forms of feed, which is forage either grazed or ensiled and developing systems that make best use of them.
- Benchmarking individual farms within small discussion groups or against average and top industry performers has an important role to play in enabling farmers to monitor variable and fixed costs and make changes to improve financial performance.

References

IOTA PACARes Research Reviews downloadable from http://www.organicadvice.org.uk/reviews.htm

- **Financial performance, benchmarking and management for mixed organic farming**
- **Role and management of whole-crop forage for organic ruminants**
- **Grass clover ley species and variety selection and management**
- **Dairy cow nutrition**

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Moakes, S. (2007-8). Organic Farm Income Results (Provisional).

Useful sources of further information

- International open-access archive for research papers on organic agriculture: www.orgprints.org

IOTA is an independent, professional body for trainers, advisers and other extension workers involved in organic food and farming.

For more information on IOTA's work and how to become a member, visit our website at www.organicadvice.org.uk or contact us using the details below. If you are looking for an experienced organic adviser we now have a database of accredited organic advisers on our website.

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