

## FINANCIAL RETURNS FROM ORGANIC V CONVENTIONAL CATTLE REARING SYSTEMS

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### Abstract

*Production of organic food continues to grow on a worldwide basis, as consumer awareness of, and demand for organic food increases. However, the Irish organic market has been slow to develop with a limited uptake in organic production by farmers. The main objective of this project is to compare the financial performance of organic cattle production to conventional production. Data on the financial and technical performance of the cattle rearing system were collected from organic farms participating in the joint Department of Agriculture and Food (DAF) and Teagasc Organic Monitor Farm Project. Data were analysed on the selected farms using the Teagasc National Farm Survey (NFS) farm recorders and recording system. Data on a sample of 11 organic cattle rearing farms were collected in 2005. The results for these farms are compared to conventional cattle rearing farms recorded in the 2005 NFS. The data show higher output on the conventional farms due mainly to higher “market” output combined with higher Direct Payments. Direct costs were €82 per ha on the organic farms compared to €260/ha on the conventional farms but gross margin/ha remained higher on the conventional farms due to the higher output. However, higher overhead costs on the conventional farms results in Family Farm Income/ha being higher on the organic farms. Cash income/ha was also higher for the organic group. Organic producers had a more viable socio-economic profile, whilst technical performance was higher on the conventional farms.*

*Keywords: Organic cattle, conventional beef, profitability.*

### Introduction

The market for organic food is growing strongly across all international markets, albeit from a low base. Food scares combined with greater health awareness have given rise to greater consumer demand for products that are produced in a natural environment. In Ireland, the growth in demand for organic food continues to outstrip domestic supply resulting in imports of organic food to make up the deficit. IFOAM, The International Federation of Organic Agriculture Movements defines organic agriculture as follows: “organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibres. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimise quality in all aspects of agriculture and the environment. Organic agriculture dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilisers, pesticides and pharmaceuticals. Instead it allows the laws of nature to increase both agricultural yields and disease resistance”. The EU definition of organic farming is: “A system of managing agricultural holdings that implies major restrictions on fertilisers and pesticides. This method of production is based on varied crop farming practices, is concerned with protecting the environment and seeks to promote sustainable agriculture development. It pursues a number of aims such as, the production of quality agricultural products, which contain no chemical residues, the development of environment-friendly production methods, avoiding the use of artificial chemical pesticides and fertilisers, and the application of production techniques that restore and maintain soil fertility”

For organic farmers worldwide, these principles provide the basis for day-to-day farming practice. The United States Department of Agriculture (USDA) has framed a definition of organic farming which, although it misses out some important aspects of the above, provides a description of the key practices as follows: “*Organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilisers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic farming systems rely on crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes, and aspects of biological pest control to maintain soil productivity and tilth, to supply plant nutrients and to control insects, weeds and other pests*”. This idea of soil as a living system is part of a concept, which maintains that there is an essential link between soil, plant, animal and people. Many practitioners involved with organic agriculture believe that an understanding of this principle is essential for sustaining a successful organic farming system.

### Organic Farming in Ireland

The Department of Agriculture and Food (DAF) oversees organic agriculture production in Ireland. They govern the sector based on what is set down in the EU regulations on organic farming. The DAF has a representative on the EU working group on organic agriculture, which consider the current regulation and any problems that need to be addressed. The DAF has approved organic inspection bodies for Ireland to carry out the inspection of organic operators under regulation (EEC) 2092/91 in respect of crop and crop products.

Currently within the EU-25, 3.6% of land farmed or 5.7 million hectares are either organic or in-conversion production. Italy has the largest number of holdings followed by Austria, Spain and Germany. There are 1,102 registered farmers in Ireland in 2007 farming 39,240 ha which represents 0.9% of total land farmed. Of the above 25,768 ha was fully organic and the remainder was in the process of conversion to organic. The growth of organic farming in Ireland over the last decade is shown in Table 1.

The data show that organic production grew rapidly in the 1990’s, peaked in early 2000 at 30,000 ha and remained static until 2005 when there was further expansion to 1104 growers farming almost 40,000 ha.

**Table 1: Irish organic farm numbers and area farmed 1995-2007**

<b>Year</b>	<b>Farms</b>	<b>Organic Area (ha)*</b>
1995	300	6,400
2000	852	27,230
2001	918	30,020
2002	923	29,850
2003	889	28,510
2004	897	30,670
2005	978	35,260
2006	1104	39,940
2007	1102	39,240

Source: Department of Agriculture & Food. \*Organic plus in conversion

Organic production in Ireland is located mainly in the west and the southwest with counties Clare and Cork representing nearly 30 percent of producers. The proportion of organic producers in the east of the country is significantly lower and as a result the area devoted to organic cereals and tillage is much lower than the national average. In the early years of organic production organic farms were considerably smaller in size than conventional. However, over time this has changed and in 2006 the average organic

farm was 36 ha compared to 37 ha for conventional farms. It should be pointed out however that significant proportion of the larger organic farmers have a part of their land that is of marginal quality.

The majority of Irish organic farms are involved in drystock viz. cattle or sheep farming and in a number of surveys of the sector, 65 percent of producers were involved with beef and a further 20 percent with sheep production. The majority of producers have more than one enterprise but the above percentages refer to the main enterprise on the farm. In 2007 there are 71 cereal producers farming 812 hectares and a further 246 horticulture producers with 355 hectares. Dairy farming is one of the least represented farming systems involved in organic production due mainly to the lack of an organised organic milk processing sector.

### Performance on Organic Cattle Rearing Farms v Conventional Farms

Drystock farming is the most prevalent system of production in both the organic and conventional farming sectors in Ireland and in this paper examines the Cattle Rearing production system. Data on technical and financial performance were collected from a sample of farms involved in the Cattle Rearing System, as defined by the EU Farm Accountancy Data Network (FADN). The method of classifying farms into farming systems, as used in this study is based on the EU farm typology as set out in Commission Decision 78/463 and its subsequent amendments. The methodology assigns a standard gross margin (SGM) to each type of farm animal and each hectare of crop. Farms are then classified into groups called particular types and principal types, according to the proportion of the total SGM of the farm which comes from the main enterprises after which the systems are named. For the purposes of adapting the EU typology to suit Irish conditions more closely, a re-grouping of the farm types has been carried out. The system titles refer to the dominant enterprise in each group and their results should not be confused with those of individual farm enterprises.

The data on organic farms were collected from farms participating in the joint Department of Agriculture and Food (DAF) and Teagasc Organic Monitor Farm Project. In 2004, a Steering Committee on organic farming proposed the selection of a number of well developed and managed organic farms to be used as demonstration farms in encouraging and promoting new entrants to organic production. Data were analysed on the selected farms using the Teagasc National Farm Survey (NFS) farm recorders and recording and analysis system. Data on a sample of 11 organic cattle rearing farms were collected in 2005. It should be emphasised that the NFS farms were randomly selected by the CSO, whilst the organic farms were specially selected due to their level of performance and experience and therefore would represent the more efficient sector of organic cattle production.

**Table 2: Land use – organic v conventional cattle rearing 2005**

	<b>Organic</b>	<b>Conventional</b>
	<b>Ha</b>	
Land farmed	31.3	27.3
Pasture	22.2	16.2
Hay	2.4	0.9
Silage	2.9	5.7
Tillage crops	2.3	1.1
Rough grazing	1.4	3.5

Source: Teagasc, National Farm Survey

Organic farms were 14% larger than conventional whilst grassland was predominant crop with 1.1 ha tillage (mainly forage crops) on conventional farms compared to 2.3 ha on organic farms. Conventional

farms had 25% more of their area devoted to winter forage, with silage accounting for 86% of winter feed whilst silage only contributed 55% to winter feed on organic farms and hay providing the balance.

**Table 3: Livestock units on organic and conventional cattle rearing farms – 2005**

	Livestock units	
	Organic	Conventional
Cattle	18.4	27.6
<i>of which</i> suckler cows	8.0	16.5
Sheep	1.9	1.3
Horses	0.3	0.2
Total	20.6	29.1

Source: Teagasc, National Farm Survey

Livestock categories are shown for both systems in Table 3 with the organic farms having more sheep but 30% less livestock than conventional farms despite having 14% more land. Combining land farmed in Table 2 with livestock units in Table 3 results in a stocking rate of 1.06 livestock units per ha on conventional farms versus 0.66 livestock units per ha on the organic farms. This is a key difference between both systems with organic farms only achieving 62% of the stocking rate pertaining to conventional farms.

**Table 4: Selected financial data for organic and conventional cattle rearing farms – 2005**

	Organic		Conventional	
	€/farm	€/ha	€/farm	€/ha
Gross Output	25,471	823	28,784	1,054
<i>of which</i> Direct Payments	18,498	591	16,495	604
Direct costs	2,578	82	7,085	260
Gross margin	23,162	740	21,699	795
Overhead costs	6,564	210	8,970	329
Family Farm Income (FFI)	16,599	530	12,729	466
Cash Income	19,293	616	15,607	572
Net new investments	2,338	75	3,011	110
Loans (closing balance)	3,231	103	3,712	136
Total Costs % Gross Output	36%		56%	

Source: Teagasc, National Farm Survey

Conventional farms had higher output (28%) – both on a per farm and per hectare basis. “Market” output i.e. returns from animal sales excluding direct payments was €12,289 per farm on conventional farms compared to €7,293 on the organic farms, which translates to €450/ha and €230/ha on conventional and organic respectively. Total production costs (direct and overhead) were €16,055 per farm on conventional versus €9,142 per farm on organic resulting in a Family Farm Income (FFI) of €16,599 per farm on the organic farms versus €12,729 on the conventional group. On a per hectare basis FFI at €530 was 14% higher on organic farms than on conventional farms. The results shown in Table 4 are similar and confirm findings in a previous study carried out in 2001 on financial performance on organic drystock farms which also found that organic drystock farmers achieved higher incomes than conventional farms due to lower production costs (Conway, A., 2002). This is clearly evident in the data in Table 4 where total costs form 56% of gross output on conventional farms compared to only 36% on the organic farms. Cash income was also higher on organic farms both on a per hectare and a per farm basis. Conventional farms had a higher level of net new investment at €3,011 per farms compared to €2,338 on organic farms.

**Table 5: Direct payments on organic and conventional cattle rearing farms – 2005**

	<b>Organic</b>		<b>Conventional</b>	
	<b>€/farm</b>	<b>€/ha</b>	<b>€/farm</b>	<b>€/ha</b>
Direct Payments	18,498	591	16,495	604
<i>of which</i> *SFP	6,259	200	7,223	265
*REPS	5,947	190	2,125	78
*DACAS	2,253	72	1,999	73

Source: Teagasc, National Farm Survey

\*SFP = Single Farm Payment; \*REPS = Rural Environment Protection Scheme; \*DACAS = Disadvantaged Area Compensatory Allowance.

The dependence on the cattle rearing system of farming on subsidies and direct payments can be clearly seen in Table 4 where they contribute 111% of farm income on the organic farms and 130% of farm income on conventional farms i.e. direct payments/subsidies account for more than 100% of farm income whenever market based output is not sufficient to cover total production costs. The composition of direct payments is shown in Table 5 showing that the decoupled Single Farm Payment (SFP) is the main contributor followed by the REPS payment.

Organic farms households were demographically more viable than conventional farms – farm operators were younger, had a higher percentage of farm holders married and had more off-farm employment. In the Teagasc National Farm Survey demographically viable is defined as the percentage of farm households which have at least one member under 45 years of age and the survey data

**Table 6: Socio-economic data on organic and conventional cattle rearing farms – 2005**

	<b>Organic</b>	<b>Conventional</b>
Age Farmer	51.8	54.0
Married (%)	72	64
Off-farm Income (% Holders/spouse)	71	61
Demographically viable (%)	60	57
Labour Units	0.94	0.93

Source: Teagasc, National Farm Survey – 2005

show that in 2005 there were 60% and 57% of organic and conventional households respectively demographically viable. Finally the amount of farm labour used on both systems was almost identical at 0.94 and 0.93 labour units respectively on organic and conventional farms.

### Barriers to Expansion

Demand for organic produce is increasing yet conversion to organic production in Ireland has not reflected this opportunity to diversify. A study carried out in 2003 by the DAF questioned existing organic and in conversion farmers on the barriers they encountered in expanding production. The results pertaining to cattle producers are shown in Table 7 in order of importance.

**Table 7: Barrier to expansion in organic cattle production**

	<b>% of respondents</b>
Over regulation/bureaucracy	59
Access to capital	55
Access to land	44
Lack of training	41
Lack of profitability	37
Lack of research	33
Unreliable markets	26

Source: Department of Agriculture and Food (DAF)

It is interesting that the major concern identified by existing organic producers was the amount of regulation and bureaucracy involved in the sector. However, it is likely that similar views would be expressed by conventional drystock producers if they were asked the same questions. Shortage of land and capital were also ranked highly with profitability and market outlets not appearing in the first four barriers identified.

## Conclusions

FFI/ha on organic cattle rearing farms was 13.7% higher than on similar conventional farms due entirely to lower costs of production (€292/ha v €589/ha). Output and direct payments per ha were higher on conventional farms but not sufficient to cover the additional costs. Organic farms were 37% larger than conventional farms. Organic producers had a more viable socio-economic profile, whilst technical performance was higher on the conventional farms.

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