



Midlands-Northeast
Dairy Development Programme
2002-2004

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Acknowledgements

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The authors wish to acknowledge the assistance of Pdraig O'Connor, Teagasc Grange for his technical support. The authors also wish to acknowledge the monitor farmers for their support and commitment to the programme and for their willingness to open their farms to other milk producers.

Foreword

The benefits of Joint Development programmes between Teagasc and industry are well recognised. They ensure that Teagasc and its partners work towards agreed objectives. This programme has helped to improve the practices on monitor farms throughout the region. The increase in profit on these farms speaks for itself. Through an extensive public events programme and the discussion group network the improvements made have been witnessed by a large number of farmers in the region.

I wish to thank all those involved in this first joint programme that Teagasc has operated in the northeast. I look forward to continuing close working relationships with each of our partners into the future.

JIM FLANAGAN
DIRECTOR, TEAGASC

Foreword

Lakeland Dairies are very pleased to present you with the results from the last three years of the monitor farm programme carried out in conjunction with Teagasc. The extra profits achieved on the monitor farms over the three years are very encouraging and highlight the benefits that come from setting and monitoring targets. The most positive aspects of the improved returns are that they were achieved locally on land very representative of the Lakeland catchment area and that they were achieved by farmers who were already farming well, thus indicating a lot of potential for farms that are not currently as well developed.

I would like to pay special tribute to the monitor farmers who opened their books and their farms to Teagasc and to their fellow farmers. I would also like to thank all of you who attended the various farm walks and participated in the discussions. Lakeland staff who assisted in the framing and organising of the programme are also deserving of thanks.

Finally, I would like to congratulate Teagasc, and in particular Trevor Dunwoody, for the professional manner in which they conducted this programme and look forward to the results and findings contributing to enhancing the livelihood of dairy farmers in the northeast in the years to come.

**ED PRENDERGAST,
CHIEF EXECUTIVE, LAKELAND DAIRIES**



Foreword

I am pleased to present the results of the latest Glanbia Teagasc Joint Programme in the north east which ended in December 2004. As you read the report and interpret the findings you will see the good progress made by farmers who participated in the programme. This progress was most marked in the area of production cost control and overall profit margin improvement. Milk quota management improved, milk sold per cow exceeded 7,000 litres for programme participants for the first time and additional milk revenues accrued due to increased quota size. On the negative side, there has been an overall increase in SCC and, issues associated with dairy cow fertility problems persist.

We are now entering uncharted waters in post mid term review dairy farming. However, efficiency of production of quality, premium raw milk will remain the benchmark to which all commercial farmers must aspire. For sustainable winter milk production there needs to be an unrelenting focus on cost control allied to improved grass production and utilisation. Other issues that must be addressed include labour utilisation and dairy cow fertility.

Though sizeable, these challenges I believe, can be successfully addressed in future Glanbia Teagasc Joint Programmes. I wish to thank all those involved in the programme and pledge continued support from Glanbia.

MICHAEL O'NEILL
CHIEF EXECUTIVE OFFICER, GLANBIA MILK

Foreword

Against a background of an upcoming radical reform of CAP, which would lead to major changes in the established model for EU agricultural funding, Teagasc in partnership with the local Co-ops in the region established the first Northeast Dairy Development Programme in 2001. The objectives were to improve the efficiency, competitiveness and profitability of our milk producers and to ensure the viability of the maximum number of milk suppliers in the region.

This publication summarises the findings of this programme and reveals some very interesting facts on many aspects of dairy farming in this region. I would stress that the findings are relevant to all our producers in terms of setting themselves future targets. This was not a theory based exercise but a very practical one carried out on dairy farms operating in similar circumstances and conditions to most of our suppliers.

The area of costs is one that will continue to be relevant and the disparity between low-cost and high-cost producers remains very significant. Even if it is not possible for many producers to attain the top status, we are confident that a major improvement in cost reduction is achievable by the majority of producers, and the monitor farm findings bear this out.

I would sincerely like to thank our producers who volunteered to be monitor farms for the purposes of this programme. I know these suppliers benefited individually from this programme and, by sharing their experiences, they have helped their fellow producers.

My thanks also to Teagasc for their commitment to this project over the past three years. Current economic circumstances dictate that all practical advice and information that can be converted into savings on the farm must be availed of. In this programme, Teagasc has laid a solid foundation on which to build.

As a next step in conjunction with Teagasc, we have already drawn up a further Dairy Development Programme for 2005 – 2007. While our objectives will be broadly similar to our initial programme, the focus will be on committed dairy farmers targeting further expansion. However, once again, information will be made available to all – the onus will be on each and every individual producer to utilise it for their own benefit.

VINCENT GILHAWLEY
CHIEF EXECUTIVE, TOWN OF MONAGHAN CO-OP LTD



Foreword

We are pleased to have been part of the Northeast Dairy Programme which was co-funded by all the milk purchasers in the region and carried out by Teagasc. As you can read from the report a tremendous amount of data has been produced, which should be of great benefit to milk producers. In the current climate, with ongoing pressure on milk price, it is imperative that all efficiencies at farm level are examined. As a group of commercial milk producers, we have much to gain from this report, and I would urge all our members to study same. We in DPC have committed ourselves to co-funding the programme going forward for another three years. With continued cost pressure at farm level it is important that this work continues.

JOE GRIFFIN
CHAIRMAN, DROGHEDA PRODUCERS CO-OP



**DROGHEDA
PRODUCERS
CO-OP**

Introduction

The primary goal of the Teagasc Joint Dairy Programme with the major milk processing companies and supplier groups in the northeast was to improve farmers incomes through developing the technical and financial skills necessary to expand and grow their businesses. The co-operatives and milk supplier groups engaged in the programme during the period included Lakeland Dairies, Glanbia, Town of Monaghan, Virginia and Drogheda Producers group. The counties covered by the joint programme included Cavan, Dublin, Kildare, Leitrim, Longford, Louth, Offaly, Meath, Monaghan, Westmeath and Wicklow. The programme was conducted over the three-year period January 2002 to December 2004.

The joint programme aimed to maximise the profitability of milk production through the implementation of appropriate practices on the farms of milk producers in the north eastern part of Ireland. Specific objectives set for the joint programme included:

- Improving grassland management
- Improving milk protein content
- Improving financial management

ACTIVITIES

Delivery of the programme was based on a number of advisory methods including:

- Farm walks
- Seminars
- Discussion groups
- Monitor Farms

Farm walks

A summary of the farm walks held over the course of the programme is presented in Table 1.

Table 1: Summary of the number, average and total attendance at the farm walks held between 2002 and 2004.

YEAR	NUMBER OF MONITOR FARM WALKS	AVERAGE ATTENDANCE	TOTAL ATTENDANCE
2002	16	57	905
2003	16	52	830
2004	13	48	620

- A total of 16 farm walks were held in 2002 and 2003 with 13 held in 2004. The target of two major events on each monitor farm during the three-year programme period was achieved. The farm walks were split approximately 50/50 between spring and autumn events.
- In addition to the monitor farm walks, three additional walks were held at Ballyhaise Agricultural College during the summers of 2002, 2003 and 2004. The focus of these walks was the research programme being conducted at the college. The attendances at these events were 150, 140 and 200 for each of the three years respectively.



Seminars

A summary of the seminars held over the course of the programme is presented in Table 2.

Table 2: Summary of the number, average and total attendance at the seminars held between 2002 and 2004.

YEAR	NUMBER OF SEMINARS	AVERAGE ATTENDANCE	TOTAL ATTENDANCE
2002	10	104	1,040
2003	7	111	780
2004	7	119	830

- A total of 10 seminars were held during spring 2002 with a further seven held during spring 2003 and 2004. The total attendance was 1,040 in 2002, 780 in 2003 and 830 in 2004. In general, the seminars were very well attended. The topics presented at the seminars focused on the main objectives of the programme. In addition, data from the monitor farms was reviewed at these events.
- In addition to the seminars outlined above, the National Dairy Conference was held in the region for the first time in 2003 and again in 2004. The average attendance at the conference was 500 in each of the two years. Some of the papers presented at the conference focused on challenges specific to the region from data derived from the monitor farms, discussion groups and research findings derived from the Ballyhaise programme.



Discussion Groups

An important focus of the programme was supporting existing discussion groups and establishing new discussion groups. Discussion groups are considered to be a very important advisory method. Ideally, discussion group members visit each other's farms and local monitor farms on a planned basis. The discussion group chairman should form a link between the members and the local Teagasc adviser and play a key role in the formulation of the discussion group programme.

The local Teagasc adviser organised and facilitated the discussion groups operating in their area. Teagasc specialists and regional co-operative personnel also supported the discussion groups. Thirty two discussion groups operated in the programme area in 2003. These discussion groups were surveyed to determine the attendance rate, number participating and number of meetings being held per year. The results are presented in Table 3.

Table 3: Average number of members, meetings and attendance at the discussion group meetings held in 2003.

	NO. MEETINGS PER DISC. GROUP	NO. MEMBERS PER DISC. GROUP	AVERAGE ATTENDANCE
Average	7.4	17	12
Total	236	544	

- The average discussion group had 17 members which is considered an ideal number of members per discussion group.
- Participation at the meetings was high with an average attendance rate of 71%.
- The number of meetings held averaged 7.4 per discussion group during the year. Excluding the three discussion groups formed during the year, the average number of meetings held rose to over eight per established discussion group. This does not include attendance by discussion groups at larger events such as the national dairy conference. The target number of meetings per discussion group is approximately 10 per annum.

Monitor farms

Monitor farms were selected to represent the typical farm in an area. In this programme, a mixture of spring and winter milk producers was selected from the counties associated with the programme. The farmers received intensive advice and monitoring to guide and evaluate the progress made on their farms. All were encouraged to adopt the newest practices from research. In year one of the programme the local adviser and programme coordinator visited each monitor farm approximately six times. This declined to an average of 2-3 visits in year two and year three of the programme.

Activities conducted on the farm included:

- Soil and silage sampling
- Cow condition scoring
- Grass budgeting
- Financial analysis through the profit monitor
- Physical and financial monitoring through the dairy herd monitor
- Breeding season planning and analysis

Disseminating the information coming from the monitor farms is of critical importance. A number of methods are used to further this process.

- Farm walks are held on the monitor farms aimed at improving the rate of practice adoption on farms in the area
- Co-op newsletters contain progress updates from the monitor farms
- Teagasc seminars report on the progress made on the monitor farms.

The county of origin and the number of monitor farms engaged in winter milk included in this report are outlined in Table 4.

Table 4: Location of the monitor farms by county.

COUNTY	NUMBER OF MONITOR FARMS	NUMBER ENGAGED IN WINTER MILK
Cavan	4	1
Kildare	1	1
Leitrim	1	1
Longford	1	0
Louth	1	1
Meath	6	5
Monaghan	4	1
Offaly	1	0
Westmeath	2	0
Wicklow	2	2
TOTAL	23	12

Monitor farms

The data in Table 4 shows the wide distribution of the monitor farms. This ensured that the regions varying soil and climatic features were represented on the monitor farms. Approximately half of the monitor farmers were winter milk suppliers. This reflected the high proportion of winter milk producers located in the north east region. The profile of the average spring and winter milk monitor farm is presented in Table 5.

Table 5: Physical profile of the monitor farms

	WINTER MILK FARMS		SPRING MILK FARMS	
	2002	2004	2002	2004
Land farmed				
Owned (ha)	45.7	46.9	36.2	37.9
Leased (ha)	17.0	17.9	14.1	11.9
Quota				
Owned (litres)	481,078	549,168	240,527	329,578
Leased (litres)	18,978	29,230	47,975	15,125
Stocking rate (LU/ha)	2.20	2.23	1.65	1.74

- The winter milk monitor farms are substantial farms with a high degree of dependence on leased land. Their scale increased slightly between the two years. Stocking rate is high reflecting the high quality of the land farmed by most of the winter milk monitor farms.
- The spring milk monitor farms are also relatively substantial and again the area of owned land increased slightly over the period. On the spring milk farms however there was a small decline in the area of leased land (2.2 ha less). Stocking rate is lower than for their winter milk counterparts reflecting a higher participation rate in REPS and the poorer quality of the land farmed.

Winter Milk Results

Results from the Dairy Herd Monitor and Profit Monitor programmes for the winter milk monitor farms over the three years of the joint programme are presented in Table 6 and Table 7 respectively.

Table 6: Concentrate input, grazing performance and milk production on the winter milk monitor farms.

	2002	2003	2004
Grass and conc. use			
Conc. fed (kg/cow)	1,478	1,526	1,480
Days at grass	235	263	260
Turnout to grass	16 Mar	26 Feb	25 Feb
Cow no. and yieldz			
Cow no. (no./farm)	81	82	85
Milk yield (litres)	6,743	7,115	7,148
Protein %	3.20	3.24	3.23
Fat %	3.73	3.72	3.77

- Days at grass increased substantially on the winter milk farms. The number of days at grass was 229 in 2001. This increased by 31 days by 2004 – an increase of 14%. Moorepark researchers value this improvement at approximately €3,767 per winter milk monitor farm. The Teagasc target for days at grass is 275 days in a spring milk system. Land quality was generally good on the winter milk farms and 260 days at grass is a good achievement considering the higher demand in early spring and late autumn of a mixed spring/winter calving herd.
- Concentrate input held static between 2002 and 2004. However, milk yield increased during the same period by 405 litres per cow. Assuming a response of 1kg milk per 1kg concentrate fed, this represents a concentrate sparing effect of almost 420 kg per cow due to an increase in grass intake.
- Average herd size increased slightly during the period and this combined with a rise in milk yield per cow meant that overall farm milk production increased by over 11% to 607,000 litres.

Winter Milk Results

Table 7: Financial performance on the winter milk monitor farms in the 2002 to 2004 period.

	2002	2003	2004
Gross farm output (c/l)	30.83	31.08	31.45
Variable costs (c/l)			
Feed	4.48	4.49	4.33
Fertiliser	1.30	1.24	1.12
Vet	0.74	0.79	0.76
AI	0.53	0.47	0.44
Contractor	0.93	1.03	1.06
Other variable costs	1.04	1.10	1.47
Common fixed costs (c/l)			
Machinery	1.25	1.46	1.30
Car, ESB, Phone	0.97	1.01	0.92
Depreciation	1.60	1.46	1.55
Other fixed costs	1.67	1.73	1.41
Common costs (c/l)	14.48	14.79	14.35
Common profit (c/l)	16.35	16.29	17.09

- Common costs reduced by 0.13 c/l on the winter milk farms between 2002 and 2004. Common costs are all costs associated with milk production except labour, interest and lease costs.
- Overall dairy enterprise common profit increased by an average of €19,544 per farm on the winter milk farms. This increase in common profit in 2004 reflects a year in which cow and calf sale prices were high and a coupled dairy premium (worth 1.2 c/l) was paid for the first time. The increase in dairy net profit over the period was 59% on the winter milk farms.

Spring Milk Results

Results from the Dairy Herd Monitor and Profit Monitor programmes for the spring milk monitor farms over the three years of the joint programme are presented in Table 8 and Table 9 respectively.

Table 8: Concentrate input, grazing performance and milk production on the spring milk monitor farms.

	2002	2003	2004
Grass and conc. use			
Conc. fed (kg/cow)	1,196	1,216	962
Days at grass	237	262	263
Turnout to grass	8 Mar	23 Feb	17 Feb
Cow no. and yield			
Cow no. (no./farm)	48	50	56
Milk yield (litres)	5,821	6132	6,125
Protein %	3.30	3.31	3.28
Fat %	3.30	3.77	3.80

- Days at grass increased substantially on the spring milk farms. In 2001, the spring milk herds spent 229 days at grass. This increased by 34 days by 2004 – an increase of 15%. Moorepark researchers value this improvement at approximately €2,332 per spring milk monitor farm. The Teagasc target for days at grass is 265 days in a spring milk system on heavy land.
- Concentrate input declined by 234 kg/cow between 2002 and 2004. However milk yield increased during the same period by 304 litres per cow. Assuming a response of 1kg milk per 1kg concentrate fed, this represents a concentrate sparing effect of almost 550 kg per cow due to an increase in grass intake.
- Cow number rose substantially (eight cows or 17%) during the period and this combined with a rise in milk yield per cow meant that overall farm milk production rose by almost 23% to 343,000 litres.

Spring Milk Results

Table 9: Financial performance on the spring milk monitor farms in the 2002 to 2004 period.

	2002	2003	2004
Gross farm output (c/l)	27.86	28.80	29.29
Variable costs (c/l)			
Feed	4.51	4.46	3.66
Fertiliser	1.09	1.11	1.23
Vet	0.80	0.68	0.80
AI	0.71	0.57	0.57
Contractor	1.09	1.01	1.21
Other variable costs	1.25	1.43	1.59
Common fixed costs (c/l)			
Machinery	1.15	1.08	0.79
Car, ESB, Phone	1.06	1.09	1.23
Depreciation	1.56	1.34	1.35
Other fixed costs	1.61	1.60	1.73
Common costs (c/l)	14.85	14.37	14.16
Common profit (c/l)	13.01	14.43	15.13

- Common costs reduced by 0.69 c/l on the spring milk farms between 2002 and 2004.
- Common profit increased by 2.12 c/l on the spring milk farms. Gross output increase accounted for two thirds (1.43 c/l) of this increase while cost reduction accounted for the balance.
- Overall dairy enterprise common profit increased by an average of €15,545 per farm on the spring milk farms. This increase in common profit in 2004 reflects a year in which cow and calf sale prices were high and the coupled dairy premium (worth 1.2 c/l) was paid for the first time. The increase in dairy net profit over the period was 59% on the spring milk farms.

Other Focus Issues

Some of the issues that were subjected to more intensive study during the course of the programme include the following:

- Herd fertility on the monitor farms
- Expansion potential and evaluation of expansion strategies
- Labour study on the monitor farms
- A review of the Ballyhaise research programme

HERD FERTILITY

The breeding and fertility performance of the spring and winter milk farms was recorded and analysed over the course of the programme. Data on spring calving herds' fertility for the period are presented in Table 10.

Table 10: Herd fertility of the spring calving cows on the monitor farms over the 2002 to 2004 period.

	WINTER MILK FARMS			SPRING MILK FARMS			TEAGASC TARGET
	2002	2003	2004	2002	2003	2004	
Replacement rate (%)	24	25	25	14	21	20	18%
Calving interval (days)	397	387	402	382	381	377	365
Conception rate (%)	52	49	54	44	48	46	55%
6 week in-calf rate (%)	44	45	51	46	47	45	75%
Empty rate (%)	20	18	17	13	11	11	<10%
Services per conception	1.9	2.0	1.9	2.1	2.0	2.0	1.7

- Cow fertility represents a continuing challenge on both the winter and spring milk monitor farms. Using ICBF values for calving interval and empty rate costs (€7.09/day and €10.77 per 1% respectively), the cost of poor fertility is approximately €13,500 and €4,400 on the winter and spring milk farms respectively in 2004.
- Average replacement rate, empty rate and six week in-calf rate do not reach the Teagasc targets for winter and spring milk monitor farms.
- A spread out calving pattern is reflected in a low submission rate to first service and is partly responsible for the below target six week in-calf rate.
- The emerging role of the Economic Breeding Index (EBI) in helping to improve the genetic element of fertility must become an important focus on farms in the region in the future.

Herd fertility

The breeding charts for over 800 spring calving cows on 20 of the monitor farms from the 2003 breeding season were analysed. The results are presented in Figure 1.

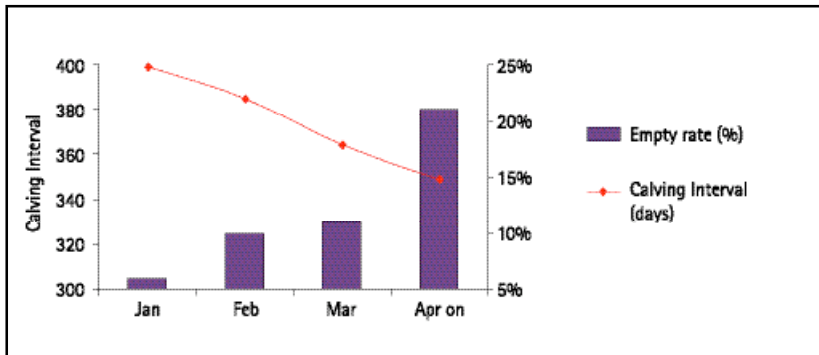


Figure 1: Calving interval (days) and empty rate (%) by month of calving for the spring calving cows on 20 monitor farms in 2003.

- The data in Figure 1 shows that month of calving had a big effect on calving interval and empty rate.
- In general, the optimum months to calve spring calving cows on the monitor farms were February and March from a fertility perspective.
- Calving earlier (January) reduced the empty rate but increased the calving interval, therefore cows were left longer before being bred at the start of the next breeding season.
- Twice as many cows calving from April onwards were empty at the end of the breeding season.

Expansion potential

The monitor farmers involved in the Midlands and Northeast Dairy Development Programme were surveyed in 2003 to determine their milk production potential and farm physical situation. The data included here was presented at the National Dairy Conferences held in the region in 2003 and 2004.

The monitor farmers' opinion of their farm's milk production potential is presented in Table 11.

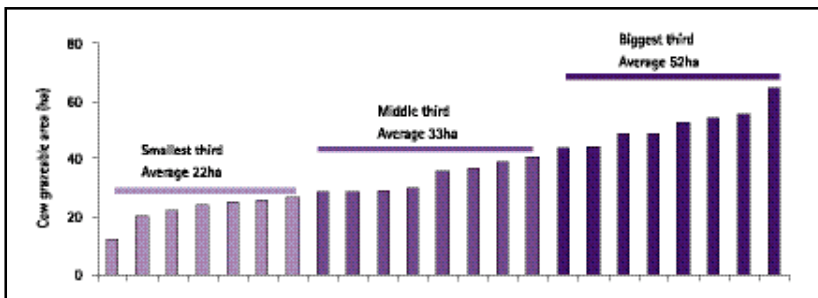
Table 11: Survey of milk production potential on the monitor farms.

	AVERAGE
Milk quota purchased in last 5 years (litres)	113,496
Current milk quota (litres)	368,750
Average potential increase over current quota (litres)	200,486
Maximum milk production potential (litres)	569,236
Average area of cow grazable land (ha/cow)	36.3
Maximum milk production (litres/ha of cow grazable area)	15,598

The data in Table 11 shows that milk production on monitor farms has increased substantially over the past five years (by an average of 44%). The monitor farmers still feel that there is considerable scope for further expansion (by an average of 54%). This can be achieved through a combination of increasing yield and stocking rate on the area accessible for grazing cows.

Cow grazable area possibly represents the single biggest limitation to future expansion on the monitor farms. While the average area available for grazing cows is relatively large at 36.3 ha, substantial differences are present between the monitor farms. An analysis of the monitor farms by cow grazable area is presented in Figure 2.

Figure 2: Area of land available for cow grazing (ha) on the monitor farms in 2003.



The top third have over twice as great an area available for cow grazing as the bottom third of monitor farms. The strategies for expansion adopted by those with the smallest cow grazable areas will differ substantially from those with the largest cow grazable areas where expansion in milk production can be substantially grass-based. Expansion options for dairy farmers with a restricted cow grazable area are evaluated in Table 13.

Converting existing facilities reduces expansion costs. Details of the existing dairy facilities, accommodation and the potential for converting drystock accommodation on the monitor farms are presented in Table 12.

Table 12: Current dairy accommodation and facilities available on the monitor farms.

	AVERAGE
ACCOMMODATION	
Number of cubicle places per 100 cows and 1-2y.o heifers	89
% with drystock housing suitable for dairy conversion	65
Average size of drystock enterprise (LU)	39*
MILK PRODUCTION FACILITIES	
Average number of rows per farm	7.7
% that would convert existing parlour to expand	91
% that would need a new bulk tank	70

*Average of 15 monitor farms with a drystock enterprise.

Currently the average monitor farm has sufficient cubicle places for the dairy cows and replacement heifers. Expansion in dairy cow number will, on many farms, be accompanied by an increase in the number of cubicle spaces. Approximately two thirds of the monitor farms have a drystock enterprise. On virtually all of these, the monitor farmers consider it feasible to convert existing cattle accommodation, mostly slatted sheds, to dairy use. On average these farms have a substantial drystock enterprise (39 LU) which would reduce the cost of accommodating extra dairy cows substantially.

The average number of rows per milking is only 7.7 indicating that on average, in the medium-term, parlour alteration is not immediately necessary. Most of the monitor farmers think that they would convert existing milking parlours rather than start from a green field site. However, over two thirds feel that they would need to replace their current bulk tank.

Analysis of the expansion options were compared against the Ballyhaise systems of milk production (details of the Ballyhaise research programme are outlined further

below). The first limiting constraint on many farms in the region is likely to be grazing land for the dairy herd. Including either high meals or maize silage in the diet allows farmers to increase milk production on the home farm.

In Table 13, three expansion options are compared to a static option. In options one and two, grazable land is limited and increasing either meals fed or feeding maize silage respectively facilitates expansion in milk sales. In option three, additional cow grazing land is leased to facilitate milk sales expansion to the option two volume.

Table 13: Physical and financial outcomes following different milk sales expansion options.

LAND SYSTEM	QUOTA	QUOTA NOT LIMITING		
	LIMITING	RESTRICTED		AVAILABLE
	BASE FARM HIGH GRASS	OPTION 1 HIGH MEAL	OPTION 2 MAIZE SILAGE	OPTION 3 HIGH GRASS
Cow no	46	49	54	57
Land area (ha)	19.4	19.4	19.4	24.1
Milk sales (kg)	286,700	329,732	355,828	356,301
Additional labour cost (€)	-	4,515	5,416	5,412
Farm net margin (€)	25,355	22,252	24,756	26,044

The data shows that when the additional labour required following expansion is fully charged, the net farm margin increases only marginally in the maize silage or leased land expansion options. Only when labour efficiency increases and some or all of the additional labour requirement is borne by the farm operator will more significant increases in farm net margin be realized. More detailed background and analysis of this information are available in the proceedings of the Teagasc National Dairy Conference 2004.

Labour study on the monitor farms

Eight monitor farms, four spring milk and four winter milk producers, supplied information each month by completing a work survey questionnaire for the Tuesday to Saturday period of the second week of each month from July 2003 to June 2004 inclusive. The protocol for data collection and analysis is similar to a previous Moorepark labour survey. The results section is divided into three areas:

- Hours worked
- Proportion of the working day spent at different processes
- Seasonal variation in labour demand

The data in Table 14 presents a profile of herd size and time worked for the two milk production systems.

Table 14: Average total and cow LU on the spring and winter milk farms and average hours worked per day.

	AVERAGE	SPRING	WINTER
Average total LU	103	67	139
Average cow LU	61	39	83
Average hours worked/day	10.8	8.1	13.5
Minutes worked/LU/day	6.3	7.2	5.8

The data in Table 14 indicates that 10.8 hours of labour was required daily on the average farm over the 12 month period. The winter milk farms required more labour than the spring milk farms – much of the difference can be attributed to differences in scale. On average the spring milk producers spent 8.1 hours working per day while the winter milk producers spent 13.5 hours at work per day.

More detailed analysis of four comparably sized winter and spring milk farms (two from each system) suggested that on average the winter milk systems were more labour intensive (47 and 37 hours worked per LU per year for the winter and spring milk systems respectively). Therefore, labour efficiencies of scale are reducing the time worked per LU as scale of enterprise increased. However, winter milk production systems appeared to be more labour intensive systems of milk production than comparably sized spring milk production systems.

Hired labour was relatively unimportant on the average spring milk farm (accounting for approximately 54 hours of the labour input over the year). The larger-scale winter milk farms were more dependent on hired labour and required approximately 1,176 hours of hired labour (the equivalent of 0.5 units of labour).

A breakdown of the hours worked on the average farm by the main processes is presented in Figure 3. (overleaf)

Figure 3: Hours worked on the average farm by process.

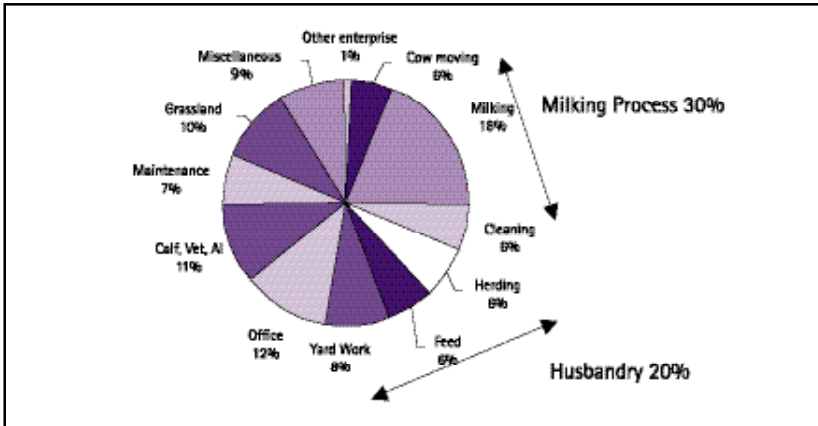


Figure 3 shows that the five big users of time are the milking process (30%), husbandry activities (20%), office work (12%), calf, vet, AI (11%) and grassland (10%). Between them the five processes consume over four fifths of the working day (83%). The proportion of time spent engaged in the main activities differed little between the spring and winter milk farms analysed

The seasonal variation in the hours spent working in these five main areas is presented for the spring and winter milk farms in Figure 4 and Figure 5 respectively.

Figure 4: Average labour demand of the main tasks on the spring milk farms.

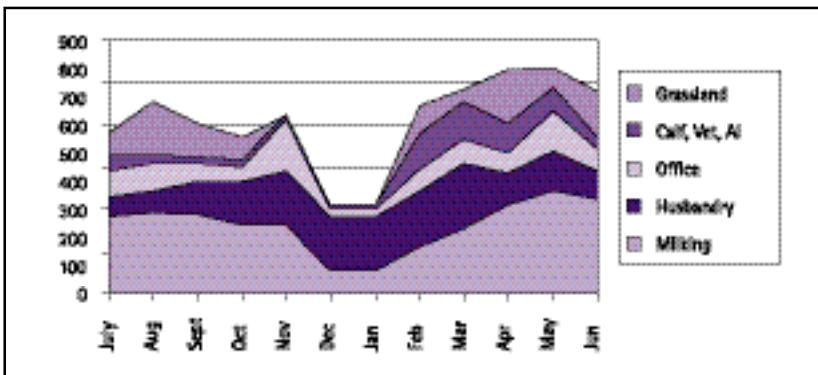
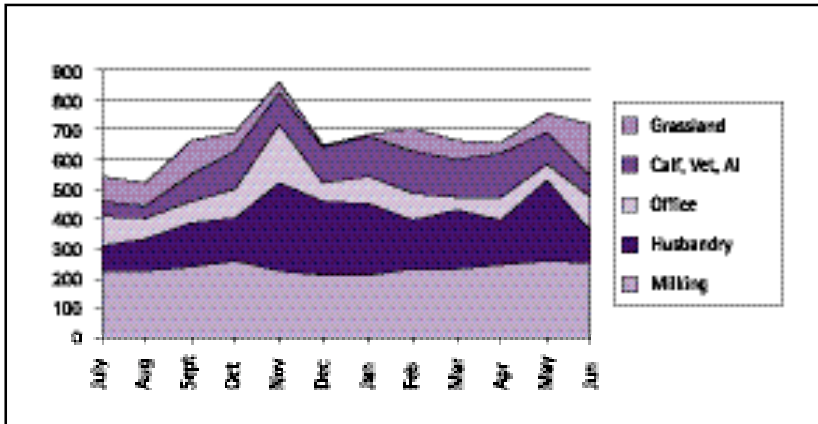


Figure 5: Average labour demand of the main tasks on the winter milk farms.



The seasonal variation in the hours spent engaged in the main tasks on spring milk farms is evident from Figure 4. The workload peaked in the March–May period with milking, grassland management and calf rearing accounting for a large proportion of the time spent working.

The time spent working drops to a minimum in the December–January period when no calf/vet/AI or grassland tasks are carried out. The difference in hours worked between the busiest and slackest months is approximately five hours – a 50% differential in the number of hours engaged in the main farm activities.

The constant labour requirement and lack of seasonal variation in the hours spent engaged in the main tasks is a notable feature of the work pattern on the winter milk farms. The calf/vet/AI and milking activities remain relatively constant throughout the year while they fell substantially on the spring milk farms. The difference in hours worked between the busiest and slackest months is approximately three hours – a 20% differential in the number of hours engaged in the main farm tasks.

To calculate an approximate return per hour from the 2003 accounts, net margin and hired labour costs were added together and divided by the total annual hours worked. The average return per hour worked was €15.88/hour before tax. The average return per hour worked to own (or own plus unpaid family labour) was €16.45/hour before tax. This return is to pay for own labour, management and capital repayment on outstanding loans and comes before a reward for the capital employed in the farm business is paid.

Review of the Ballyhaise research programme

The Ballyhaise research programme led by Dr. John O'Doherty and his team at Ballyhaise Agricultural College has looked at two different systems of milk production – the High Grass System (BHG) and the High Concentrate System (BHC). In the BHG system cows are supplemented with approximately 650 kg of concentrate, while in the BHC system cows receive 1,450 kg of concentrate, with the greatest proportion being fed in early and late lactation.

The cows are turned out to grass by day in early March and by day and night in late March. Cows are managed on a rotational grazing regime. In the BHG system the whole farm is grazed in the first grazing rotation, finishing in mid April, while in the BHC system approximately 60% is grazed in the first grazing rotation. Grass cover is monitored weekly and surpluses and deficits are corrected as necessary. Nitrogen is applied after each rotation with 240 kg/ha being applied annually. Approximately 50% to 60% of the farm is harvested for first cut silage in late May, with 30% of the farm harvested for second cut silage in mid-July. Grass cover is increased from mid August and by late September the covers peak at approximately 1,100 kg DM/ha.

The breeding season lasts for thirteen weeks starting in late April and finishing in late July. Therefore there is a thirteen-week calving season starting on the end of January, with a mean calving date for the herd of between the 10 and 20 of February.

Table 15 shows the milk production, liveweight, replacement rate and overall feed budget for the Ballyhaise site.

Table 15: Milk production, liveweight, replacement rate, feed budget and the proportions of each feed in the diet for Ballyhaise feeding systems.

	BHG	BHC
Milk Production		
Milk (kg/cow)	6,389	6,894
Fat (g/kg)	42.3	45.5
Protein (g/kg)	33.0	32.8
Lactose (g/kg)	45.3	45.6
Average live-weight (kg)	539	549
Feed Budget (kg DM/cow)		
Grass DM intake	3,372	3,020
Silage DM intake	1,554	1,678
Concentrate DM intake	604	1,291
Proportions of total DM		
Grass	0.61	0.50
Silage	0.28	0.28
Concentrate	0.11	0.22

Milk yield was higher in the BHC system than in the BHG system. The response to increasing the level of concentrate supplementation was 0.7 kg of milk per kilogram of extra concentrate dry matter (i.e. going from the BHG to the BHC system). Sixty one percent and 50% of the diet is composed of grazed grass in the BHG and BHC systems respectively.

Summary

WINTER	SPRING
<p><i>Days at grass</i></p> <ul style="list-style-type: none"> Increased by 31 days to 260 days 	<p><i>Days at grass</i></p> <ul style="list-style-type: none"> Increased by 34 days to 260 days
<p><i>Milk yield</i></p> <ul style="list-style-type: none"> Increased by 405 litres/cow to 7,148 litres 	<p><i>Milk yield</i></p> <ul style="list-style-type: none"> Increased by 304 litres/cow to 6,125 litres
<p><i>Dairy common profit</i></p> <ul style="list-style-type: none"> Increased by €19,544/farm (€375/week) 	<p><i>Dairy common profit</i></p> <ul style="list-style-type: none"> Increased by €15,545/farm (€299/week)

CONCLUSIONS

- Profits rose substantially on the monitor farms through a combination of expansion in milk production, cost reduction and value increase
- Grass budgeting will help farmers in the region to extend their grazing season and increase grass intakes.
- February and March calving cows had the best calving balance of calving interval and in-calf rates – these months are the optimum months to calve spring calving cows in the region.
- Dairy herd infertility is a continuing challenge that needs to be addressed through better management and breeding.
- The monitor farms expanded substantially over the course of the programme.
- Expansion options which will differ from farm to farm depending on available land and facilities.
- The conversion of drystock facilities could reduce expansion costs on many farms in the region.
- The substantial gains made on the monitor farms highlight the role for a focused advisory effort on dairy farms in the region.



Notes