

# Optimizing the Grazing Platform

A report for



**NUFFIELD IRELAND**  
**Farming Scholarships**

by

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**2009 Nuffield Scholar**

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## **Executive Summary**

The purpose of my Nuffield Study was to understand and experience how profitable grass-based dairy farmers implement the key principles and practices to optimise the grazing platform.

My situation is that I have a grazing platform of 60 hectares. The introduction of the quota exchange scheme presented me with the opportunity to milk more cows and produce more milk from this 60 hectares.

However my objective was not to maximize production from the grazing platform but to optimize it. For me optimizing means having a simple, easily managed, uncomplicated, grass-based, high output system that delivers a high profit and a good quality of life.

On my study tour of New Zealand, Ireland and Australia, I found that the farmers who successfully optimized their grazing platforms from grass were the ones that had well-structured business plans, with a simple grass-based system, very good infra-structures and a good work-life balance.

The results of my study clearly indicated that these successful farmers:

- Had clear strategic business targets and a mission statement,
- Had a very good understanding the grass plant, how, why and when it grew,
- Had open minds and eagerly sought new information,
- Were good delegators and time managers,
- Had simple, effective farm infrastructure,
- Were superb grassland managers,
- Had full knowledge of their cash flow situation at all times,
- Always had replacement heifers reared separately from the grazing platform,
- Were mostly crossbreeding Jerseys with Friesians ,

Each section in this report discusses the factors necessary to optimize a grazing platform to its full potential.

This report is about understanding and experiencing how profitable, grass-based dairy farmers implement the key principles and practices to optimise the grazing platform area available to each farmer.

I identified these farmers because research has proven that the New Zealand dairy model of turning grass into milk is the lowest cost in the world.

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The main message arising from my report is that it is possible to optimize the output from the grazing platform and I want to share with other farmers, the information and practices necessary to achieve that from my contacts during my study tour.

Initially, my main focus was to find key people to teach me the skills of how to optimize the stocking rate per hectare and to show that when the correct infrastructure on the farm is in place, that it can be a highly profitable and friendly place to work which ensures happy farmers and contented employees.

This study is based on how to grow grass and most importantly how to utilize it as efficiently as possible. It also focuses on learning about how farmers manage large herds with minimum labour and finally how they succeed in optimizing their grazing platform.

## **Introduction**

My name is Seamus Holland and I am a dairy farmer in Durrow in County Laois. My subject is very important to famers who want to maximise profitability of their farms

I am very grateful to One51 and Nuffield Ireland for their scholarship which enabled me to study my chosen topic.

## Objectives & Aims

### Objectives :

- To identify the factors that contribute to optimizing the grazing platform
- To analyse the pros and cons of the factors exerting the greatest influence on the grazing platform
- To make recommendations on how to achieve the optimum performance from the grazing platform
- To meet farmers who are growing 15 to 16 tons of grass per hectare stocked at 3 cows per hectare producing 1350 kilos of milk solids per hectare,

The grazing platform is defined as the area of land immediately adjacent to the milking parlour. Moorepark research has shown that the most profitable way to produce milk in Ireland is by growing 15 tonnes DM/ha and stocked at 3 cows/ha. Combined with breeding this should give an output of 1350 kgs MS/ha. This should be the target.

Grass is six times cheaper than grain and the aim is to produce the maximum amount of milk solids from grass as profitably as possible, with strategic use of concentrates.

With the introduction of the quota exchange system and the removal of milk quotas in 2015, the most limiting factor for farmers will be land adjacent to the milking parlour.

Hence, the main objective of my Nuffield study was to learn the key principles of optimising the grazing platform in a way that provides farmers with high profit, an easily managed system and a high quality of life.

I also want to learn how this can be achieved in an environmentally friendly way and to consolidate my core business around the grazing platform.

## Methodology

Prior to starting the study, I studied Irish research data on some of the best farming operations that focused solely on grass based systems in Ireland.

I visited farms in New Zealand and Australia to explore the principles of optimizing the grazing platform. I also studied the continuous research into the topic.

I selected these countries as representative of low-cost, grass-based farmers producing high milk solids and utilizing high amounts of grazed grass per hectare.

These all seem to have the same methods:

- High stocking rate
- High output of milk solids per cow and per hectare
- Good labour efficiency
- The necessary capital requirements for infrastructure – paddocks, roadways, milking, machinery, housing
- Good management skills

I met farmers who had expanded their farms through various different methods. I was most interested in the grass based systems, as the methods used to run this model can be applied anywhere in the world if you have the correct climate, therefore, it is a system that would work well in Ireland.

Farmers in Ireland don't have great soil type but we do have a very good climate to grow grass. I wanted to see grass based models that were growing 15tons of dry matter per hectare per year with low labour input and high profit

I also wanted to see how they could be run in an environmentally friendly manner and repeated year in, year out at ease to both farmer and farm employees.



Research in Moorepark carried out by Michael O' Donovan shows that the grass based model of growing 15 tons of dry matter per hectare stocked at 3 cows and feeding 600kilos of concentrate was the one that generated the most profit in the Irish system.

## Chapter 1 - Understanding Grass

In Ireland Perennial Ryegrass is the most commonly grown grass species, accounting for 95% of total grass seed sold.

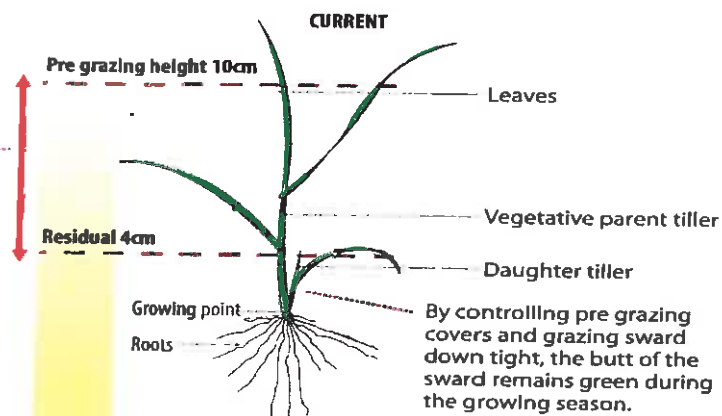
It is vital to understand the basic structure of the Rye grass plant, which typically maintains about three green leaves per tiller. The growing point of an individual tiller is close to the ground.

Leaves are produced at varying speed, slowly in mid-winter and quickly in the spring and early summer, tapering off into the autumn.

These new leaves grow up through the center of old leaf sheaths so that the youngest sheath is always at the top of the plant with the older leaves located near the base. The new leaf is the only one that is growing. The old leaves finish growing as the new leaves appear. Leaf emergence is influenced mainly by temperature with leaf size governed by nutrient supply, especially nitrogen.

**Figure 1:  
Pre and  
post grazing height**

For optimal utilisation you should move in and graze swards out at 10-12cm down to a height of 4cm. This will ensure that the butt of the sward remains green and daughter tillers are established.



*Figure 1.grass plant*

Ryegrass plants typically maintain three leaves per tiller and once this three leaf stage has been reached, the oldest leaf will die each time a new leaf has been produced. The life-span of a Rye grass leaf varies from about 16-30 days in the spring-summer to 40-60 days in the winter.

Dairy farmers have recognized the importance of changing grazing intervals as leaf emergence changes to maximize yield and to maintain the quality of the Ryegrass plant.

Grass needs to be grazed down to 3.5cm to 4cm to prevent a white butt of dead unpalatable grass accumulating and also to keep the growing point close to the ground.

It is important that swards are grazed down in the spring to promote the maximum number of tillers. This will result in dense swards that will maximize yield and prevent poaching.

Producing seed heads takes a lot of energy out of the plant, energy that would otherwise have been used for leaf growth. Therefore, if you allow Ryegrass to go to seed you are effectively reducing annual growth by up to 50%.

Grazing swards down tight in spring and early summer will ensure the seed head is continuously being grazed in the early stages of development. When the seed head is eaten it encourages the crown of the plant to produce more tillers therefore increasing sward density. A knock on benefit of this, is that you are also grazing out the seed head of the weed grasses. As their only means of reproduction is by going to seed, many of the weed grasses will naturally die out of swards that are grazed tight during the spring.

By understanding how the Perennial Ryegrass plant works, farmers have the opportunity to increase annual pasture growth. While most farmers spread 200kg of nitrogen per hectare, they are growing 8-10 ton of dry-matter but there is the potential to increase this to 15tons of dry matter per hectare without spreading any additional fertilizer.

It all comes back to understanding the regrowth cycle of the Perennial Ryegrass plant and ensuring the plant does not go to seed. Grass needs to be grazed down tight in the first half of the grazing season to 4cm, not allowing pre-grazing covers to exceed 16-1700 kilos of dry matter per ha.

When the first leaf emerges from the plant it is equivalent in feed value to concentrate. However, if you let your pre-grazing covers exceed 16-1700 kilos of dry matter per ha and allow the leaf to decay, its feed value at point of grazing has been reduced.

It is important to note that leaf stage indicates grass quality in the paddock whereas pasture cover only tells the farmer how big an area the cows need to be given.

This technology has to be adopted at farm level but from my experience many farmers are hesitant about using grass measuring systems

Many farms have swards that cannot grow enough grass during the year especially in the spring and autumn and are lacking a sufficient quantity of Ryegrass in the pasture. This is where reseeding should be introduced as it has a two year pay back.

It provides more grass at the shoulders of the year and it is more responsive to nitrogen, has higher feed value, has faster regrowth, and supports higher stocking rate.

Research at Moorepark has shown that old pasture grows 3-5 tons less dry-matter per hectare. Assuming a germination level of 95% at reseeding in year 1, followed by 3-5% reduction thereafter, the Perennial Ryegrass content will have reduced to 50-60% after 8-10 years. As a result it is recommended by Teagasc that reseeding be carried out every 10 years.

Farmers constrained by land in Ireland should consider increasing the stocking rate on their milking platform to eliminate surpluses at peak growth periods and to use leased land as wintering blocks. This tactic would ensure optimum farm covers at calving, minimizing the need for purchased supplements and possibly reducing the need for investing in facilities to comply with nitrate regulations if the lease farms already have storage.

Realistically, if significant grass covers are present on these farms when the herd arrives, these facilities may only need to be used during periods of bad weather. Stocking rates of up to 3.5 cows per hectare should ensure surpluses are reduced on the milking platform. Allowing for the average Irish farm, which at present is 32 hectares, this could have the potential to carry 112 cows and still comply with stocking rate requirements with leased land diluting the overall stocking rate.

With fluctuating milk prices, it becomes even more important to look at cost saving measures that can be taken without increased expenditure. Practices observed on the Lincoln dairy farm in New Zealand, as well as other farms visited, were excellent examples of using well- established methods of grass land management on a commercial scale; to improve profitability by increasing productivity.

This demonstrates the possibility of utilizing an extra 1.5 - 2.5 tons of dry matter, which disappears back into the soil through death and decay under average pasture management, be it in Ireland or New Zealand. This in reality is money down the drain, indicating the opportunity to increase income at farm level by implementing the practices as outlined above.

Michael O Donovan (Teagasc) said that research in Teagasc has found that the amount of grass a farm utilizes per hectare has a direct correlation with the amount of profit that a farm makes. Every extra ton of grass utilized per hectare equates to an increase in profits of 160 euros per hectare.

### **Section Summary**

Dairy cows need to be trained to graze to the correct residual because cows are very good at training farmers to leave behind residuals that are too high to ensure quality pasture at subsequent grazing.

Improvements in efficiency at farm level in Ireland, by implementing long-

standing grazing practices, has to be aggressively targeted rather than promoting increases in scale as a means of maintaining and/or increasing income.

As a first step, recognition of the three leaf stage and intensive measurement and budgeting must be carried out and monitored on a weekly basis.

Use of the pasture feed wedge graph and the spring rotation planner with appropriate software allows the farmer to be at the cutting edge of technology.

Reseeding 10% of the farm each year will ensure that pasture has sufficient quantity of Perennial Ryegrass. The importance of grazing residuals and their link to farm profitability must be recognized.

## Chapter 2 - Grass Budgeting



*Figure 2 – Grass plate-meter*

Grass budgeting is something that we all need to have a good knowledge of as it is the most important skill needed on a grass farm. It ensures that feed demand is matched by farm growth. It involves walking your farm weekly and then making the decisions.

Padraig French of Teagasc explained it very simply, he stated that you should try to "set your farm stocking rate up for what your farm can handle long term, not based on what happened last year". It is important for those in spring milk production to set the stocking rate, based on the amount of grass that can be grown for the five middle months of the year, mid-April to mid-September.

French stated that: "good grass varieties on good dry land can grow over 15 tonnes to the hectare and carry over three cows comfortably per hectare", however, this should be adjusted down 10% to calculate a stocking rate for heavier soils.

The secret to this stocking rate is having good grass varieties and regular re-seeding. If grass seed varieties are of poor quality, it will only be able to carry 2 to 2.3 cows per hectare.

I visited one farmer who was stocked at 2.8 cows per hectare over the whole farm, with the milking platform stocking rate increasing to 4.8 cows per hectare for a number of weeks between April to mid-June.

Last year he fed 300 kilos of supplements per cow and produced 365 kilos of milk solids per cow or 1,022 kilos of solids per hectare. He has a very dry, free-draining farm so he is confident that he can increase his stocking rate on the same amount of land going forward.

New Zealand farmers use their grass budget in spring, to ensure that they do not run out of grass before growth meets demand. They aim to produce their milk without any supplementary feed apart from nitrogen; they are prepared to pinch the cows in early lactation to make sure they have enough grass pre-mating.

In Europe however, I think it would be more profitable to supplement with concentrate to match supply of grass with herd demand.

Laurence Shalloo and Brendan Horan from Teagasc have carried out valuable research on what could be achieved in stocking a farm to its full potential.

In the table as printed below, he found that a 40 hectare farm stocked at 3.3 cows per hectare and growing 15.5 tons of dry-matter per hectare and utilizing 14 tons the profit at a milk price of 28 cents per litre, was the highest of four trials with each trial growing 16 tons of dry-matter.

It was only when milk price went higher, that 4.5 cows per hectare was most profitable but at that stocking rate, it was also the biggest loss maker when prices dropped.



**Table1: Profitability of a 40 hectare farm at various stocking rates and with different yields of grass (tons dry matter/hectare) at different milk prices.**

Source: Teagasc, Moorepark

| Grass growth (tonsDM/ha/yr)            | 12.5    |         |         |         | 16      |         |         |         |
|--|---------|---------|---------|---------|---------|---------|---------|---------|
| Stocking rate (LU/ha)                  | 2.2     | 2.5     | 3.3     | 4.5     | 2.2     | 2.5     | 3.3     | 4.5     |
| Cow numbers                            | 100     | 116     | 136     | 184     | 100     | 116     | 136     | 184     |
| Milk Production kg                     | 502,063 | 559,469 | 640,826 | 811,590 | 502,063 | 559,469 | 640,826 | 811,590 |
| Milk Sales kg                          | 490,423 | 545,966 | 624,996 | 790,172 | 490,423 | 545,966 | 624,996 | 790,172 |
| Milk yield kg/cow                      | 5,021   | 4,823   | 4,712   | 4,411   | 5,021   | 4,823   | 4,712   | 4,411   |
| Fat%                                   | 4.09    | 4.09    | 4.09    | 4.09    | 4.09    | 4.09    | 4.09    | 4.09    |
| Protein%                               | 3.50    | 3.50    | 3.50    | 3.50    | 3.50    | 3.50    | 3.50    | 3.50    |
| Milk solids kg/cow                     | 373     | 358     | 349     | 326     | 373     | 358     | 349     | 326     |
| Milk solids kg/ha                      | 887     | 987     | 1126    | 1429    | 887     | 1023    | 1131    | 1429    |
| Animal diet                            |         |         |         |         |         |         |         |         |
| Grazed Grass                           | 3,423   | 3,247   | 3,199   | 2,807   | 3,423   | 3,247   | 3,199   | 2,840   |
| Grass silage                           | 1,085   | 1,044   | 1,038   | 1,353   | 1,085   | 1,048   | 1,043   | 1,188   |
| Concentrate                            | 499     | 630     | 630     | 630     | 499     | 630     | 630     | 630     |
| Total                                  | 5,007   | 4,921   | 4,867   | 4,790   | 5,007   | 4,925   | 4,872   | 4,758   |
| Grass Growth (tons DM/ha)              | 12.6    | 13.1    | 13.7    | 14.0    | 12.6    | 15.0    | 15.5    | 16.0    |
| Grass Utilisation (tons DM/ha)         | 10.6    | 11.2    | 12.3    | 12.7    | 10.6    | 12.8    | 14.0    | 14.4    |
| Concentrates Purchased (tons DM)       | 50      | 73      | 86      | 116     | 50      | 73      | 86      | 116     |
| Silage Purchased (tons DM)             | 0       | 29      | 68      | 236     | 0       | 0       | 22      | 169     |
| Full labour costs (€/farm) <i>bc/€</i> | 28,924  | 33,552  | 39,336  | 53,221  | 28,924  | 33,552  | 39,336  | 53,221  |
| Milk Returns @22cpl                    | 118,879 | 132,345 | 151,503 | 191,549 | 118,879 | 132,345 | 151,503 | 191,549 |
| Profit @ 22cpl                         | -4,762  | -11,340 | -15,946 | -38,281 | -4,762  | -9,943  | -11,871 | -30,451 |
| Milk Returns @28cpl                    | 151,484 | 168,643 | 193,056 | 244,085 | 151,484 | 168,643 | 193,056 | 244,085 |
| Profit @ 28cpl                         | 26,030  | 28,188  | 25,870  | 14,588  | 26,030  | 26,586  | 29,948  | 22,418  |
| Milk Returns @34cpl                    | 184,089 | 204,942 | 234,609 | 296,621 | 184,089 | 204,941 | 234,609 | 296,621 |
| Profit @ 34cpl                         | 60,842  | 59,717  | 67,687  | 67,457  | 60,842  | 63,114  | 71,762  | 75,267  |

### Getting started at grass budgeting:

Without a proper farm map, where each paddock is identified by number and size with a strategically placed farm roadway; measuring and monitoring grass growth is not possible. It is best to get this done by a professional. Overseas this is done on a widespread scale.

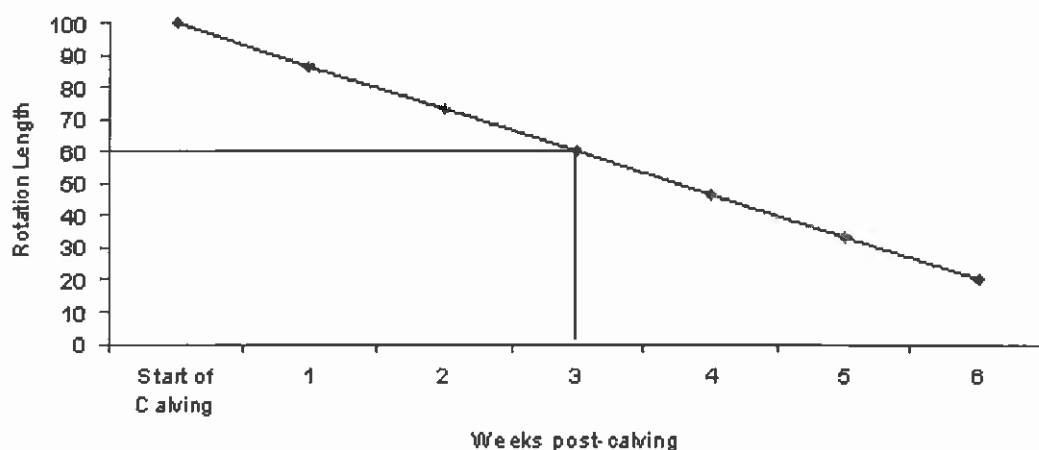
Most of the farms I visited in New Zealand had the map hanging on a board in the dairy so everyone knew what was happening and which paddocks were being skipped due to surpluses. Each paddock was numbered so that no mistakes were made.

One farmer pointed out to me that pasture is the main source of feed on a dairy farm, therefore, the hectares of pasture is the measure of feed supply on the farm.

The decision about stocking rate is the single most important decision for the farm so the stocking rate chosen can harvest what the farm grows efficiently.

In the spring, the aim is to have enough grass on the farm until the end of the first rotation which on most farms in Ireland should be in early April.

The objective of doing a spring budget is to assess if there is enough grass to:



Put the cows out to grass as they calve

- Get cows out to grass day and night as soon as possible
- Determine when and how much silage ground can be closed up
- Determine when to finish first rotation
- Let the rest of the stock out to grass

The simple objective during the main grazing season is to keep growth rate and feed demand equal.

If the farm is growing more than is required, the surplus should be taken out so as to ensure that the grass does not get out of control.

Doing a weekly measurement ensures that the farmer knows what is happening on the farm.

The big lesson learned from budgeting is that the key to profit on Irish dairy farms is keeping good quality grass in front of cows at all times.

It also gives confidence to increase herd size on the grazing platform knowing that the cows will be fed adequately.

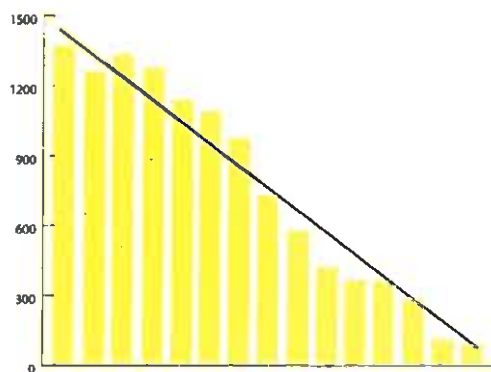
## Chapter 3- The Feed Wedge

After the completion of the first rotation, the primary grassland management tool is the feed wedge. The feed wedge can be depicted by a series of bar charts showing the grass cover in each paddock.

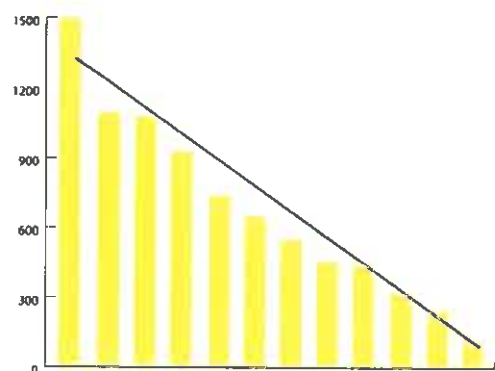
Ranked from the highest to the lowest, it gives a visual breakdown of the kilos of grass available in each paddock on the farm and acts as an early warning device for future surpluses or deficits that may occur.

The actual cover available in each paddock is compared to the target cover for the farm. The target pre-grazing cover is derived from the following formula: Stocking rate (cows per hectare) multiplied by grass intake (kilos per cow) divided by rotation length (days in rotation)

The target cover for each paddock is obtained by drawing a line from the target per grazing yield to a target post grazing cover. The most important part of this process is that the correct decisions are made from the data that is available. The decisions are influenced by the answers to the following three questions:



This graph shows a situation where the paddocks due to be grazed next are not at target pre-grazing yield. However, there is sufficient grass on the rest of the farm. No action needs to be taken in this situation.



In the graph above it appears that there is a deficit, but the last four paddocks have sufficient grass. If there is a low stocking rate on the farm there should be sufficient grass and no action needs to be taken.

1. Is there a grass surplus?
2. Is there a grass deficit?
3. What is the short-term forecast for growth?

The objective of the wedge is to try to feed the cows on grass only from (May to August) and to offer cows grass with green leaf to the base and very little stem. It is essential to measure grass every week to know that you have enough good quality grass in front of the herd.

The aim is to keep the pre-grazing yield at the target level, which is 1,400 to 1,700 kilos of dry matter per hectare for optimum intake and utilization.

Paddocks above the target level are generally skipped and cut for silage while supplements will be fed if the paddocks are below target. Obviously decisions such as these are influenced by what the expected growth rate for the next seven days will be. The feed wedge also acts as an indicator for when certain paddocks should be grazed.

The key points to dealing with surplus grass are:

1. Do not delay your reaction to high grass growth
2. Caution should be exercised so excessive grass is not removed resulting in a deficit
3. Do not increase stocking rate by closing paddocks for long term silage

From the farms that I visited, I found that effective grass budgeting has contributed significantly to the successful running of the business. The steps involved are easy to follow and do not require any great knowledge about grass measuring, once you are set up with the basic tools of measuring grass with a plate meter and the correct computer software.

## **Chapter 4 -Choosing the right cow for the grass system**

Cows for the Irish grass based system must be robust and easy to manage as well as being capable of producing high yields of solids from a grass diet.

Crossbreeding is often referred to as a quick fix solution to problems and results from trials suggests that this may well be the case. The ultimate aim for every dairy farmer is to have cows that will maximize profit and research in Moorepark has shown that crossbreeding can do this.

In a seasonal milk production system, compact calving is critical as it enables the cow to reach her full potential in a target lactation of 300 days, which allows grazed grass to be utilized to the maximum. Production from the Holstein Friesians has resulted in unrivalled production potential but unfortunately is less suited to a grass based system, in particular, reduced reproduction efficiency.

While many farmers that I visited have diversified their breeding goals to include survivability, fertility was always the main issue.

Research from Moorepark in Ireland suggests that using a Norwegian red or a Jersey sire on a Friesian will deliver high profit to the Irish farmer. In both cases production potential is not compromised by cross breeding but crucially, reproduction efficiency and survival of the crossbred cows is improved when compared to the Holstein Friesians on their own.

The advantage from crossbreeding is substantial where the EBI or more specifically the fertility sub-index is low.

However, farmers will benefit from hybrid vigor even with high EBI herds. This is the basis for crossbreeding in New Zealand where they use the best bulls from both breeds to give the benefit of highbred vigor.

Friesian cows with a Norwegian red sire will result in a type of cow, very

similar in terms of appearance and production characteristics to the Friesian cow; that farmers are used to working with.

This could be an option for those wishing to avail of the benefit of crossbreeding but who feel that crossing the herd with jersey sires is too drastic a move as they would like to keep the type of cow they have.

The Jersey crossbred cows will in general be dark, brown/black in colour. They will be smaller and more compact, 50-60kg lighter than their Friesian contemporaries but their body condition will tend to be superior. Milk volume will be reduced but milk solids content will be significantly increased and as a result, the yield of the milk solids will be maintained and indeed increased.

Increased production efficiency is a consequence of increased solids production from a reduced body size; which leads to a lower cost for the farmer. High milk solids in conjunction with a lower milk volume is what our processors are seeking and this is reflected in how they are paying us for our milk. Solids, rather than volume, are what the new milk pricing system is based on, so the advantages from crossbreeding are substantial. The main reason for crossbreeding in New Zealand is that they capture the benefits of the hybrid vigour by using the best bulls from both breeds.

Experience to date suggests that we can have confidence that crossbreeding works, as crossbreds have significantly improved fertility, leading to a greater survival rate with minimum calf slippage, which leads to a more profitable dairy farm. They have a better ability to maintain body condition which leads to a more robust cow for the grass based system.

Research from the Moorepark team found that the Jersey- Holstein Friesian cows are well suited to a grass based system as they have a high intake of grass per unit of live weight and a high yield of milk solids per unit of intake without negative consequences of longevity.

Their study demonstrated that Jersey cows had the highest production efficiency and the highest intake capacity; with the dry matter intake measured at 4% of live weight. The Holstein Friesian had the lowest intake capacity, with dry matter intake measured at 3.4% of live weight and the Jersey-Holstein Friesians was in between, with dry matter intake measured at 3.6% of live weight. In general, cows with high intake capacity tended to be smaller than their contemporaries with low intake capacity.

### **Section Conclusions**

While there is no reason to suggest that the Friesian cow can't deliver high solids per cow, crossbreeding with Jersey will have a significant improvement on the composition of the milk. Fertility rates are also superior with the Jersey crossbred.

In financial terms, the benefits of the first cross with the Jersey-Holstein Friesian has, in monetary terms, been valued at over €180 per lactation compared to the Holstein Friesian.

While crossbred cows are not the preferred choice of all dairy farmers, it is very clear from research that the Jersey cow will make a large contribution to maximize output/profit per hectare. It is viewed from this research, that crossing with the Jersey is a means of producing a cow that is capable of achieving large intakes of forage, relative to their potential milk yield.

Efficient conversion of feed is critical as feed costs account for 80% of total variable costs associated with milk production.

This means that crossbreeding has many benefits for farmers wishing to maximize solids per hectare on their grazing platform.



## Chapter 5 - The New Zealand Farmer



The most important part of any business to achieving its goals is the operator on the ground, as he/she is the main cog in the wheel to making it all happen. He/she needs to have all the skills required to achieve the results.

From the various farms that I visited while on my study, I was very inspired by the fact that so many cows can be managed by such a small work-force in a very labour- efficient and welfare-friendly environment.

One farm that I visited gave me a great insight into the basic fundamentals of a well-run farm. Louis Kruger's farm was producing 200,000 kilos of milk solids from 600 Jersey cows from an all-grass system, feeding only hay and silage as supplements; which were produced from surpluses on the farm.

Milking is carried out once a day in the spring until the mean calving date or until the grass growth can meet demand for the herd.

Currently, the farm is very much a family affair comprising of his son, daughter and son-in-law, his wife and of course himself. This closely-knit family constitutes the farm labour-force. His farm philosophy is "keep it simple, keep it profitable and keep it sustainable". The concept of sustainability, according to Kruger is about not only farming in an environmentally - friendly fashion, but also allowing people to follow a system that provides a good work-life balance.

### Kruger's Mission Statement

1. The system relies on maximizing pasture utilization which requires regular feed budgets and grazing plans.

### Farm Management

- Have a plan - If you fail to plan then you plan to fail.
- Measure and monitor everything, but most importantly pasture. If you can't measure it, you can't manage it.
- He uses "The 5 Day Rule" - when growth is exceeding demand and he can see five days of sufficient feed for the herd, he will drop out a paddock for supplement.
- If the cows are still happy after four hours in the paddock, they have had enough to eat; this is a good check on your measuring.
- His aim is to run the farm at 90% of its potential production, as it is more profitable than attempting to get 100%, and spending more than 10% to get there.
- At certain times of the year, he is prepared to feed 2kg of dry matter less for a short period of time, to gain two extra days in the rotation.
- He concentrates on cow health rather than condition score. Healthy cows put on weight as soon as they are dried off.
- Nitrogen is only used in extreme circumstances and not as a regular tool.
- Bells and whistles cost money.

This was a farmer who had my study topic fully implemented and had knowledge on all areas. A common misconception with the grass-based system is that farmers using this system are focused on feeding grass and grass only.

What I was finding was that these individuals thought like business- people and the grass based system was one that they found delivered the best possible profit in return for the money invested, in addition to providing for a decent life-style to all involved.

The use of practical feed and financial budgets was absolutely critical to the profitable running of the successful farms that I visited.

The farmers following this system are the ones who are expanding at a phenomenal speed. They can be held back by things such as, not being able to find enough livestock or the correct farm, but they are rarely held back by finding the capital to fund their next venture.

Farmers in New Zealand have simple farming systems in place, resulting in a good lifestyle for themselves and for their families, with the cows working for them, rather than vice-versa. These people have high profit margins, retaining up to 60% of Gross Farm Income and this includes everything (including heifer rearing costs) except for tax and interest on term loans. It also includes a salary for the farmer and any family members working on the farm.

The thing I found was that the type of cow to harvest grass effectively was absolutely vital, this was invariably the Friesian-Jersey cross, this cow has the ability to feed herself, get back in calf, walk long distances, produce 350-400 kg milk solids per year and live for an average 4.5 years, all on the cheapest feed known to farmers- grass

## **Chapter 6 - Once a Day Milking**

Once-a-day milking could have a part to play in optimizing the grazing platform. It revealed some very interesting data. As we all know, every farm and farmer is different; the farmers I met practicing once a day milking chose it as a business decision rather than a lifestyle decision.

I had a preconception that once a day milking was for people who wanted to take it easy on their workload, but my findings proved that to be far from the truth.

New Zealand farmers showed me herds on once a day milking and they explained their reasons for choosing this system. I must say that it was very impressive to see what they were achieving.

Firstly, the cows were a Jersey-Friesian cross and their solids were the same as the twice a day system, furthermore, they were able to stock the farm with an extra 15% of stock.

They stated cows ate less on the once a day system, so the same kilos of grass consumed was producing the same kilos of milk as would be achieved on the twice a day system.

They also affirmed that the cows were always in better condition, which made wintering a lot easier enabling them to keep the cows at the correct condition score for calving.

The reason why the once a day system was chosen on many farms was because they were quite hilly and difficult to manage, so the target was 900 kilos of milk solids per hectare.

When for geographical reasons, a farm is difficult to access, once a day milking made it possible to utilize all the land adjacent to the milking shed.

### Summary of Section:

- OAD has many benefits for farms that have land adjacent to the milking shed but may have to walk cows long distances to get to the pasture.
- The same land would otherwise be used to rear heifers but using the once a day system, it would allow heifers to be replaced by milking cows.
- There is less lameness in cows walking long distances
- Generally there is less pressure all around on the farm, including both man and beast.

## **Chapter 7 - Contract Rearing ~Heifers**

Contract rearing of heifers is based on the principle that the farm owner has limited land area around the milking platform and because dairy cows are 2 to 3 times more profitable than rearing replacement heifers; he/she contracts another farmer to rear his replacements for him. This allows him/her to carry 20-25% more cows on the milking platform. Contract rearing of heifers offers great scope to optimize the grazing block. It should only be considered when heifers are consuming grass on the milking platform.

The management, in simple terms, involves a dairy farmer entering into a contractual arrangement with another farmer.

All variable and over-head costs are incurred by the rearer for example, bedding, feed, fertilizer and animal dose.

The owner of the stock will supply all the vaccines and the semen.

### **The benefits of this system**

- Where land availability is limited it can offer an opportunity to increase cow numbers on the grazing block
- Dairy farmers can focus solely on the dairy herd
- The contract rearer has the assurance of a set price for his services
- The dairy farmer is using his own stock thereby retaining control of his herd's genetic profile

### **Disadvantages of this system**

- It reduces the dairy farmers' control of the rearing of the stock
- It requires frequent communication and management
- The consequences of stock coming into contact with other stock on the contract rearer's farm, can often lead to disease issues

- Disputes can arise so it is vital that a legal agreement is in place
- It is recommended that the calf is transferred post weaning and returns within four weeks of calving, thereby spending over 600 days on the rearer's farm
- In all cases a written contract should be written up so as to eliminate disputes between both parties

**Contracts should state:**

- Target live-weight gain at set ages
- Weighing and reporting procedures
- Penalty payments for non-achievement weights
- Dosing and vaccination programmes
- Payment rates, method and timing of payment
- Death and losses provisions
- Making provisions for Artificial Insemination and stock bulls

**Summary of section:**

Taking everything into account, the concept is engaging, and having spoken to farmers on my study they all summarized it very simply, that you have to trust your contract rearer as things will always go wrong so there has to be give and take, but you generally have a good instinct about the person you choose so that goes a long way to assuaging your doubts about the agreement.

## **Chapter 8 - Controlling Infectious Disease.**

As every farmer wants their farm to perform to its maximum, it is essential that all disease is prevented or controlled.

This subject is an integral part of any livestock farm and can have devastating effects if there is not a bio security program in place for the farm. Infectious diseases such as BVD, IBR, salmonella, Neosporin Johnes and leptospira are names that are becoming very familiar to farmers and have resulted in massive economic losses on Irish farms.

There needs to be greater awareness of these infectious diseases amongst dairy farmers and there should be a national testing programme set up to identify animals affected by these diseases on Irish farms.

At present we have a system in Ireland where pre-movement and post-movement testing of the female animal is carried out solely for tuberculosis and brucellosis.

This could be extended to the testing of these other serious contagious diseases which could be introduced in the annual herd test. This could start the process of cleaning up our herds providing a disease free status for our Island.

The effects of these diseases on herds are increasing culling rates and veterinary costs. Currently, a group called *Animal Health Ireland* is actively trying to implement a compulsory test programme for BVD and IBR which is not before its time, as there is a considerable amount of movement carried out between farms in Ireland.

A survey carried out by Riona Sayers in Teagasc found that 50% of Irish herds are classed as open herds (with no policy on movement on or off the farm).

Key to the success of eradication programmes will be educating farmers on



the effects of these diseases and the effect it is having on the farms' output and profit. The objective here would be to be able to display a disease free status on all animals when being sold which would attract a higher price, therefore demonstrating that farmers will be rewarded for having a strict bio security programme in place on their farms.

## **Chapter 9 - Lifestyle and Social Considerations**

Farmers who are over worked, as I witnessed on my study tour, are working up to 70-90 hours per week and are running the risk of not performing to the best of their abilities.

This report is about understanding and experiencing how profitable, grass-based dairy farmers implement key practices to optimize their grazing platforms.

However, I could not fail to observe some of the undesirable aspects of a single-minded pursuit of expansion and profit. While these do not relate specifically to my main objective, I was saddened by the high levels of marital breakdown, stress, depression and rural decline apparent throughout the farms in New Zealand.

Farmers need to strike a balance in their lives, as I witnessed a lot of farmers who were too focused on their farms and their own business goals, resulting in the exclusion of their personal goals and a more balanced lifestyle.

In my view everyone needs to stand back and assess their lives on a broader basis rather than just business success. I certainly learned that the best-run farms were not always run by the happiest people and I feel that we are all guilty of setting our business targets too high and forgetting about the most important things in our lives.

## Chapter 10- Conclusions

From my research both in Ireland and overseas and confirmed by what I encountered on the many grass based farms I visited, this report draws the following conclusions.

- Simple grass based systems can grow 16 tons of dry-matter per hectare. A stocking rate of 3.3 cows would seem the most profitable and sustainable system for optimizing the grazing platform with a milk price of @28 cents per litre.
- The lack of measured information on Irish farms is restricting progress. Measuring and budgeting everything, whether it be grass or money, is very important because in its absence the farmer doesn't know where to start and what to focus on.
- Computer skills necessary to facilitate the assembly of good farm records, are in scarce supply among dairy farmers in Ireland compared with our competitors. Consequently, the recording of farm data, be it financial, calf births or death, grass budgeting or animal health or fertility data, are unlikely to be recorded without good computer skills.
- Having a closed herd policy minimizes a lot of disease breakdowns on farms.
- Contract rearing of heifers, rarely done in Ireland, allows the milking platform to maximise the number of cows milked. It is a very attractive proposition for both parties as everyone can focus on what they do best.
- Once-a-day milking, which is rarely practiced in Ireland, may have a part to play on farms where cows have to walk long distances from the furthest paddocks to the milking shed.
- Successful dairy farmers don't have to be slaves to the cow. My evidence shows that farmers can strike a balance between farm business success and personal success.

## Chapter 11- Recommendations

Based on my study tour, my recommendations for dairy farmers and other parties interested in helping farmers optimize production and profit from grass are:

- State and private consultants must be fully aware of the potential and limitations of the milking platforms of farms based on soil type, topography and the farmer. Educating these agencies must be high priority if Ireland is to deliver on the 20:20 vision.
- Dairy farmers, farm organisations and state/private consultants must buy into the concept of optimizing the milking platform through organised planning and measurement.
- When developing a farm one must visualize the long term potential of the milking platform and build the infrastructure with this expansion in mind.
- Every business should have a mission statement which should be simple and easy to implement – a process facilitated by an independent adviser.
- To achieve the 16 tons DM/hectare target, which will be challenging, Teagasc should introduce a grass mentoring service for farmers. This should focus on grass budget/measurement and also on the necessary computer skills necessary to deliver maximum grass growth/utilization.
- Contract rearing of heifers needs to be promoted as a way of freeing up grazing platform acres, as it is the most obvious way to have an input into your replacement stock while still not having to be hands on with the management or tying up valuable land from the grazing platform.
- Crossbreeding should seriously be considered as it has huge benefits on fertility, the longevity of the cow and increasing milk solids, which is what the new milk payment system is targeting.
- Testing for infectious diseases must be made compulsory and carried out with the annual herd test and also farmers need to be made more

aware of the seriousness of these diseases and the damage they can cause to their herd. The Department of Agriculture has a responsibility to implement a testing programme for the country.

- Once-a-day milking should be well researched and promoted where applicable, as it has many benefits, especially for farmers who have land adjacent to the milking shed but walking distance is the problem.
- Grazed grass is the cheapest feed for the cow so every farmer should educate themselves about keeping their cow at grass as many days as possible in the calendar year.
- Farmers need to seek independent advice on setting up their plans and targets and not run the risk of burn out in achieving their goals.
- All farmers adopting the grass based system should visit New Zealand and see first-hand how farms are run with a low labour input and a high volume output.

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