



## McDonald's Europe Flagship Farms Beef – John Power, Co. Waterford Ireland

### Introduction

This case study demonstrates how a small family business has used effective farm management and participation in breeding and business programmes to create a profitable beef enterprise, whilst also fostering good environmental and welfare practices on the farm.

The key initiatives undertaken by John Power can be summarised as follows:

- The farm is a member of the Bord Bia Beef Quality Assurance Scheme which is an integrated scheme for beef producers and processors to provide the customer with quality assured beef. The scheme details elements such as legal compliance, animal welfare, and environmental stewardship, which are independently audited and certified.
- The farm is a member of the Irish Cattle Breeding Federation's HerdPlus information service which provides a range of farm management data to aid and improve the productivity and economics of the beef enterprise.
- Straw bedded calving pens and calf creep areas are provided during the winter housing period. This improves comfort for calving cows, helps reduce disease challenges at calving and benefits calf health and welfare.
- A paddock grazing system is operated, which allows the farm to more accurately match the nutritional demands of the livestock with the quality and availability of the grass. Although infrastructure costs are higher than for set stocked systems, the benefits from improved stock performance and pasture management have made this an excellent option for the beef enterprise.
- By working with Teagasc and Dawn Meats, John has demonstrated a willingness to learn, change and adopt new practice. Trials in new and alternative practices which are undertaken on the farm are then communicated via open days and workshops.
- The farm is a member of the Rural Environmental Protection Scheme (REPS), which encourages simple and effective environmental management on the farm whilst providing economic support to allow the farm to undertake the necessary improvements, such as tree planting, fencing of waterways and establishing habitat areas for wildlife.



“ John sold his dairy cows a few years ago to be able to concentrate on his beef suckler herd, he then transferred some of the practices from the dairy system and incorporated them into the management of the suckler herd. One of the practices which has been very successful is the paddock grazing system which John now operates across the farm, this has increased grass productivity and improved animal performance from home grown forage. With increasingly volatile feed prices impacting on the profitability of beef production, growing and producing more high quality forage or feed on farm is a key aspect of a sustainable beef sector. John is keen to share his knowledge and practices with others, and is always looking to learn and improve what he is doing, which makes him an ideal Flagship farmer. ”

Karl Williams, Flagship Farms Programme Manager, FAI

## Summary of actions and benefits

The table below summarises the key areas of good practice displayed by John Power, and the benefits (EN environmental / EC economic / ET ethical) that arise from taking these actions.

	Action	Benefits
<b>Certification/ Assurance</b>	<b>Member of the Beef Quality Assurance Scheme</b>	<ul style="list-style-type: none"> <li>EN The scheme ensures the farm is complying with environmental measures and legislation</li> <li>EC Improves the marketability of the cattle</li> <li>ET Ensures food quality, food safety, worker and animal welfare are maintained to a high level</li> </ul>
	<b>Animal health</b>	<b>Suckler Cow Welfare Scheme measures</b>
	<b>Paddock grazing system in place</b>	<ul style="list-style-type: none"> <li>EN Reduces potential pasture damage from over grazing and poaching/pugging</li> <li>EC Allows the farm to accurately match the nutritional demands of the livestock with the quality and availability of the grass</li> </ul>
	<b>Rubber slat covers fitted into winter housing</b>	<ul style="list-style-type: none"> <li>ET Allows cattle to undertake more natural behaviours and provides improved comfort from the cushioned floor surface</li> </ul>
	<b>Straw bedded areas</b>	<ul style="list-style-type: none"> <li>ET Calving cows and calves are provided with a comfortable and warm lying area</li> </ul>
	<b>Member of HerdPlus information service</b>	<ul style="list-style-type: none"> <li>EC The service provides a range of management information to help increase farm productivity and economics</li> <li>ET Information on breeding, fertility and calving to help improve herd health and welfare</li> </ul>
<b>Business ethics &amp; supplier relationships</b>	<b>Best practice communication with partners</b>	<ul style="list-style-type: none"> <li>EN Trialling and adopting new practices which help improve environmental stewardship</li> <li>EC Working closely with Teagasc and taking part in farm trials, such as developing new grass mixtures to help improve grassland productivity</li> <li>ET A willingness to share and adopt best practice, through farm open days and farmer visits</li> </ul>
<b>Environment</b>	<b>Pollution control</b>	<ul style="list-style-type: none"> <li>EN The diesel tank has been positioned in the disused dairy, which can contain any leaks or spills of fuel</li> </ul>
	<b>Member of Rural Environmental Protection Scheme</b>	<ul style="list-style-type: none"> <li>EN Over 1 hectare has been developed into a habitat area for wildlife, 300 Ash and Oak trees have been planted, bird boxes erected and water courses fenced off from livestock</li> <li>EC For undertaking specific practices to enhance and improve the local environment, the farm receives a grant</li> </ul>



## Background

John and Catherine Power's farm is located in Co. Waterford, Ireland. The farm has been in the Power family for five generations, with John and his wife Catherine now running the business. They employ a local man, Sean, who works with John full time on the farm as Catherine is employed as Principal of the local school.

The farm extends to approximately 140 hectares, which is managed in two blocks and supports a suckler herd of 200 cows producing finished beef animals. This enterprise is run on a grass based system with grass silage fed to animals during the winter. To achieve the necessary body condition for slaughter, beef animals are fed 2–3 kilogrammes of a cereal concentrate in their diet, which is purchased locally. All the offspring are finished as beef heifers and young bulls from 15–21 months of age. The

suckler cows are either a Limousin cross or a Simmental cross and the stock bulls are Charolais and Limousin. The majority of replacements are bred from within the herd to accelerate the breeding lines on the farm and also reduce the disease risk associated with purchasing animals.

John has supplied beef cattle to Dawn Meats for the past 26 years and has a very good relationship with his local Dawn Meats plant.

John is also an active member of The Agriculture and Food Development Authority (Teagasc) and has hosted farm walks in conjunction with Teagasc to facilitate knowledge transfer among fellow farmers.

### Facts: Irish Farm Data

Ireland consists of 6.9 million hectares of land, 4.4 million of which are used for agriculture (about 64% of total land area). Of this farm land, 80% is devoted to grass production and only 9% to crop production. Agriculture is responsible for around 3% of Ireland's GDP and in 2010 Gross Agricultural Output (GAO) was valued at €5.35 billion. Milk accounts for the largest share of GAO at 34% while cattle and beef account for 32%, pork 7%, sheep 4%, cereals 5%, and forage crops 19%.

### Facts: Irish Beef Industry

The beef industry is one of Ireland's most native and prevalent agricultural industries, with 93,000 farms undertaking cattle farming to some degree. The extensive production system makes a significant contribution to the Irish economy and in 2010 beef and cattle production was valued at €1.7 billion. The majority (90%) of the beef produced in Ireland is exported, making the country the largest exporter of beef in the northern hemisphere and 4th largest in the world.

In the past decade, the structure of the export trade has changed dramatically. Whereas previously (2000) 50% of beef exported was destined for international, often unpredictable, markets, trading is now almost exclusively (98% – almost 0.5 million tonnes of beef) to high value markets in the UK and Continental Europe, generating a profit of €1.51 billion. Ireland's suckler herds are essential for serving these high value markets, producing good quality, superior carcasses for France, Italy and the Netherlands. In recent years, increasing demand for good value weanlings, improved quality of finished stocks and declines in EU suckler herd numbers have all benefitted Irish beef sales on the EU market.

(Source: <http://publicspendingcode.per.gov.ie/wp-content/uploads/2012/02/SucklerVFMReview310112.pdf>)

## Assurance / certification

### Bord Bia Quality Assurance Scheme

The farm became a member of the Bord Bia Beef Quality Assurance Scheme in 2004 when it was first launched. The assurance scheme aims to ensure consumer satisfaction in quality Irish beef goods and covers food production from the farm to right through to transport and factory processing. Farms are independently assessed on areas of environmental practice, animal and staff welfare, and food safety. Accreditation is awarded when the farm meets the required standards of production.



The Bord Bia logo is associated with high quality Irish produce ensuring confidence for consumers and trade buyers. The farm benefits from access to best practice advice and training, and from increased profits by selling higher value, certified beef.

## Animal Health & Welfare

### Suckler Cow Welfare Scheme

The Suckler Cow Welfare Scheme (SCWS) was a nationally funded scheme aimed at improving the welfare and quality of beef from Irish suckler herds. The programme was operated by the Irish Cattle Breeding Federation (ICBF) and the Agriculture and Food Development Agency (Teagasc). Together they coordinated the training of cattle farmers, assessments of farm welfare practices and the collection of suckler herd data.



### Completion of seven measures aimed at improving welfare

Involvement required completion of seven measures aimed at improving the welfare of suckler herds (see table overleaf). Farmers successfully fulfilling all requirements received a subsidy payment of €80 per registered cow calving on the farm to cover the cost of changes in welfare practices. Penalties were implemented for failing standards and helped increase compliance within the scheme.

The five-year scheme began in 2008 and had over 50,000 participating farmers and 750,000 cows. The national scale of this initiative has led to widespread implementation of behaviour and management changes to improve animal welfare for suckler cows and calves. The Value for Money report by the Department of Agriculture, Food and the Marine estimated that the scheme had encouraged the use of good welfare practices by famers from 20% prior to the scheme to 50% in 2012.

(Source: <http://publicspendingcode.per.gov.ie/wp-content/uploads/2012/02/SucklerVFMReview310112.pdf>)

**Table.** SCWS farm welfare measures

<b>Measure</b>	<b>Details</b>
Calf tagging and registration	Cows and calves eligible providing they are correctly registered through ICBF Animal Events System
Disbudding	Within 3 weeks Local anaesthetic needed over 2 weeks (excludes polled/late erupting animals)
Castration	Not compulsory Not within 4 weeks prior to or 2 weeks post weaning period
Minimum calving age	Average 24 months for heifers Less than 22 months not eligible
Weaning procedure	Meal feeding 4 weeks prior and 2 weeks post weaning 1 kg/calf/day Graduated weaning For herds with over 10 cows, calves must be weaned in a minimum of 2 groups No sale of calf until after 2 weeks post weaning
Animal Events	Registration of animals through Irish Cattle Breeding Federation (ICBF) Completion of forms
Training	Must be completed by the end of year 2 Includes record keeping and theory Practical demonstration covering relevant topics e.g. suckler herd production and breeding Specific welfare training Demonstration of ICBF services and Breeding indexes

A key aspect of the programme was to acknowledge the importance of good breeding practices in suckler herd welfare. The information collected on the calves includes sire and dam identities, birth mortalities, calving ease, weaning weight and calf temperament, and is used to identify bulls and suckler cow replacements that confer high welfare characteristics to the herd. Through detailed evaluation of individual calf traits, the online databases, including ICBF's Euro-Star index, provided extensive information to aid farmers and industry breeders in making the best breeding decisions for herd productivity and welfare. SCWS has encouraged many farmers to subscribe to the ICBF database, providing a wealth of genetic information on Irish suckler herd status. This has greatly improved the reliability of genetic predictions and enhanced the value of breeding programmes using the database. On-going progression in genetic quality of Irish suckler herds aims to promote healthy, productive cattle that are well suited to the farm environment.

Although the scheme has now finished John has continued to implement the welfare requirements of the scheme and has altered some aspects of his management to take advantage of the information he gained.



SCWS instils good breeding practices

### Paddock Grazing

The farm uses a grass-based farming system, grazing the herd on the farm's 140 hectares in the summer and producing grass silage for cattle during the winter housing period. The farm is largely self-reliant in cattle feed, requiring only limited quantities of locally purchased concentrates to finish the stock. In order to maximise pasture productivity, the Powers use a paddock (or rotational) grazing system. Unlike set stocking, where the herd has access to an area of pasture for a period throughout the season, paddock grazing involves grazing the herd in a relatively high stocking density for a defined period (from a few days to a week) before moving them on to a new paddock. Rate of rotation is dependent upon numerous factors including stocking density and feed requirements of the herd, size of pasture, and crop quality and growth rate. Grazed fields are rested and grass is given time to regrow to a suitable grazing height before cattle are re-introduced.

### Facts: Environmental benefits of rotational grazing

Rotational grazing provides better manure (fertility) distribution than typical continuous grazing. In conventional set stocking, cattle manure and urine is often distributed close to shaded areas and water. Soil phosphorus and potassium levels have been found to be 3–5 times higher in these areas above the field average. High stocking rates and short grazing periods used in paddock grazing lead to more even distribution of manure, improving soil health and potentially saving on fertiliser inputs, and reduces the environmental risks associated with high levels of soil nutrients.

Paddock grazing has also been found to result in a greater persistence of forage species of grasses that regrow from stored carbohydrates and are sensitive to overgrazing or repeated defoliation.

(Source: <http://www.ca.uky.edu/agc/pubs/id/id143/id143.pdf>)

The key benefit of a rotational system is increased forage yield and optimised feed intake by the herd. Cattle grazed at a high stocking density for a short period graze the paddock evenly with

reduced opportunity to selective feed or overgraze the land. Careful management reduces damage caused by poaching or pugging. Crop regrowth is optimised and good quality, persistent forage levels are maintained throughout the season, which can be matched to the nutrient demands of the animals. Feed consumption from a pasture grazed over a short period can be estimated relatively accurately, as any change in grass cover is largely the result of herd intake.



Rotational grazing results in increased forage yield and optimised feed intake



Healthy crop regrowth and allocation of animals to appropriate paddocks leads to increased gains in animal weight that translate into increased profits for the farm enterprise. In addition, paddock grazing can eliminate much of the wastage in crop utilisation seen in conventional grazing. Forage utilisation in set stocking systems can be as little as 30–50% as much of the grass available is left unconsumed and decays, or is trodden, soiled or unpalatable. Well-managed paddock grazing has been estimated to increase forage utilisation by 50–65% for grazing periods of 3–7 days, 55–70% for 2 days and 60–75% for single day rotations. Additionally, where grass supply outstrips demand, excess can be reserved for conversion into silage or hay, minimising forage waste and feed costs. Improvements in feed efficiency often allow increased stock to be kept on the farm.

Herd health can be improved with rotational grazing as resting of pastures interrupts with the lifecycles of potential parasites and reduces disease risk to the herd. Time spent moving the herd also provides the opportunity to assess the health and mobility of individual animals more frequently than set stock systems.

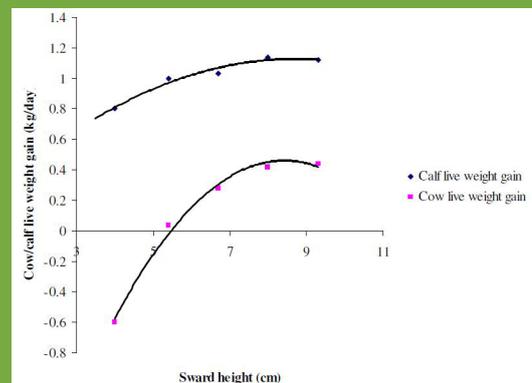
Implementing paddock grazing is initially more expensive to establish than conventional grazing methods. This is due to infrastructure costs of adding extra water supplies, fencing and access routes. The system is easier to manage and grass growth and productivity is increased which has economic advantages by increasing herd performance and the profitability. The Powers are finishing their beef heifers and young bulls to a high quality by 15–21 months of age, with most of this production achieved predominantly from grass or forage grown on the farm.

### Facts: Optimal grazing

Studies by the College of Agriculture, Food and Rural Enterprise have shown that suckler cow and calf performance is directly influenced by grass availability (see Graph). Grazing animals need to consume dry matter (DM) forage equivalent to 2–5% of their bodyweight. Providing access to a pasture with sward height of 8–9 cm (grass cover of 2,600–2,900 kg DM/ha) maintains weight gain for both mother and calf. Importantly, below 5–6 cm sward height (grass cover of 1,900–2,100 kg DM/ha), nutrient availability is reduced and cow and calf must be fed supplementary feed in order to retain weight.

(Source: CAFRE. Ulster Grassland Society)

**Graph.** Effect of sward height (cm) on performance of suckler cows and their calves.



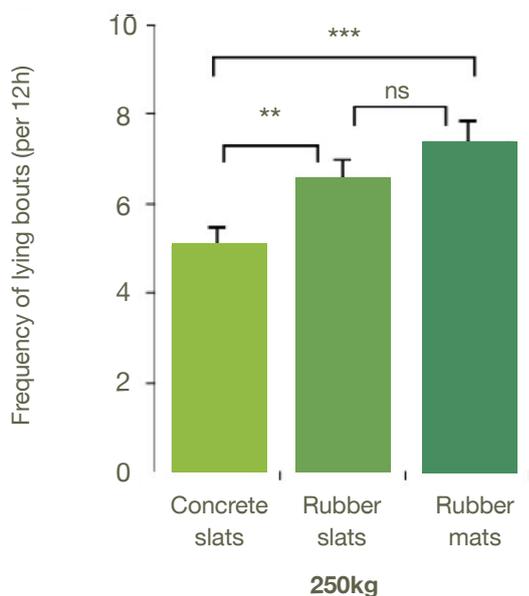
### Rubber slatted housing system

In Ireland, winter weather conditions necessitate moving animals to indoor housing facilities. Concrete slatted systems are used predominantly as they are easy to maintain and allow good manure drainage and management. However, increasing concerns exist over the consequences of this system on the animal's welfare. An average 500kg animal standing on concrete flooring emits a ground pressure per hoof of 1.6 Bar (10 times the pressure from a human foot). This pressure on hard concrete surfaces is thought to cause leg compression and foot injuries (including laminitis and hoof lesions) in growing cattle. Additionally, the lack of friction between the hoof and the smooth surface makes secure movement difficult and behavioural studies have observed altered gait patterns (to avoid slips) and reduced frequency of lying down (due to increased pressure on joints and slip avoidance).

The Powers have fitted rubber slat covers to the fully slatted concrete flooring in the winter housing. Several studies have shown the benefits in animal welfare and performance of using rubber flooring in cattle housing. Animals exhibit more natural behaviours including increased uninterrupted attempts and greater frequency of time spent lying down (see graph below), demonstrating that rubber slats increase the comfort and welfare of the animal whilst housed indoors.

**Graph.** Average (mean) number of lying sessions in a 12h period on three floor types for 250kg dairy bulls. \*\*\*P < 0.001, \*\* 0.05 < P < 0.1.

(Source: [http://www.slu.se/Documents/externwebben/vh-fak/husdjurens-miljo-och-halsa/Does\\_rubber\\_flooring.pdf](http://www.slu.se/Documents/externwebben/vh-fak/husdjurens-miljo-och-halsa/Does_rubber_flooring.pdf))



Rubber slatting increases animal welfare



Rubber slatting provides numerous economic benefits

Although there are initial instalment costs, the economic benefits of rubber flooring are well noted. The improved conditions result in increased growth rates, with higher slaughter weights and better carcass conformation than those achieved with concrete housing (see table overleaf).



**Table.** Average performance data for beef cattle raised on different floor systems in Ireland.

Source: [http://www.agrisearch.org/attachments/article/81/Book\\_6\\_-\\_The\\_Effect\\_of\\_Housing\\_System\\_on\\_Performance,\\_Behaviour\\_and\\_Welfare\\_of\\_B](http://www.agrisearch.org/attachments/article/81/Book_6_-_The_Effect_of_Housing_System_on_Performance,_Behaviour_and_Welfare_of_B)

Performance	Floor Type		
	Concrete Slats	Rubber Slats	Straw-bedding
Food Intake (kg DM/day)	9.0	9.2	8.9
Live weight gain (kg/day)	1.06	1.13	1.12
Carcass gain (kg/day)	0.67	0.70	0.69
EU conformation classification (1 worst, 5 best)	2.9	3.0	3.0
Carcass Composition (%)			
Lean	63.2	63.9	63.5
Fat	21.3	20.5	20.8

### Straw bedding for calving areas

When given the choice, cattle will choose straw bedding over solid concrete or rubber slat flooring. The material provides the most comfort and grip for the animal and allows it to carry out natural behaviours most effectively. However, it has been estimated that with current straw production in Ireland, only 20% of the country's cattle could be bedded on this material.

Straw bedded calving pens and calf creep areas are provided during the winter housing period, as the calving period is a critical time for both dam and calf, the straw bedding provides the optimum surface, improving the comfort and welfare of the animals.

### Irish Cattle Breeding Federation’s HerdPlus breeding information service

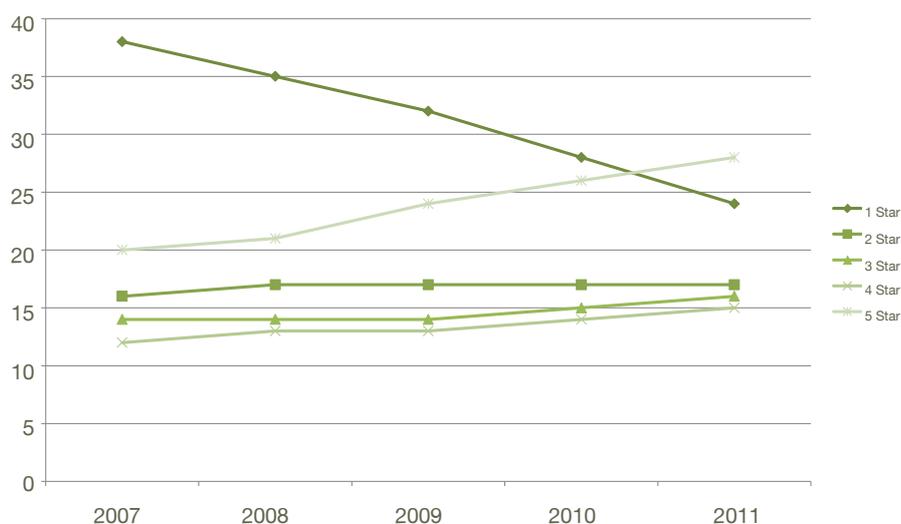
The HerdPlus breeding information service provides an extensive online service for cataloguing and evaluating Ireland’s suckler beef and dairy herds. Started in 2007, the Beef HerdPlus service now has over 8,000 members registered in the database. Information is collected on the performance and ancestry of each herd, and can be accessed by farmers and industry breeders to make informed decisions regarding the best management and breeding practices.

The service documents extensive information on each herd individual, including key performance areas in breeding, calving, fertility, live weights and slaughter. In addition, the database provides information on the national averages for suckler herds to enable farmers to make performance comparisons against their own herd. Trend reports are generated over a five-year period to allow farmers to monitor the progression of important traits in the herd.

Key management application provided by the scheme include the €uro-Star Index and Weight Predictor programmes. The €uro-Star Index creates a genetic summary of the herd, highlighting animals with beneficial breeding traits. The index assigns individuals a grade of 1 (least valuable genetically) to 5 (most valuable, pedigree animals) determined by multiple performance characteristics. Increased use of the service following SCWS uptake, has meant that more commercial farmers are using the information to make important breeding choices to improve herd efficiencies and welfare. Farmers are increasingly selecting 5-star beef bulls in preference to lower rated 1-star bulls (see graph below).



**Graph.** €uro-Star rating of beef bulls used from 2007–2011. *Source: DAFM*



Studies have revealed that selective breeding using the highest Euro-Star indexed animals leads to on average €250 more at sale of weanling or steer for slaughter than 1-star animals.

John breeds the majority of his replacement heifers from within the herd and the breeding bulls are purchased. The procurement of breeding bulls was based on their visual attributes, but this policy has completely changed since the ICBF system was launched and John is specifically selecting bulls based on the results of their maternal traits and ease of calving.

The data from HerdPlus have also provided important feedback on an individual cow's performance; this allows John to select cows from which to breed replacement heifers, and cows which require culling from the herd. This has had the outcome of improving the calving interval to 366 days.

**Table.** Stock prices for Euro-Star indexed animals.

Source: [http://www.icbf.com/publications/files/Beef\\_HP\\_Journal\\_2012.pdf](http://www.icbf.com/publications/files/Beef_HP_Journal_2012.pdf)

<b>€uro-Star index</b>	<b>Mart Data</b> Price of male weanlings sold at 8.5 months (average)	<b>ICBF</b> Price of steers sold at 27 months (average)
5 star	€767	€1527
3 star	€693	€1414
1 star	€574	€1224

The weight predictor report is a tool for monitoring the growth rates and feed requirements of individual animals within the herd. Weights recorded by the farmer are uploaded automatically onto the database. The programme uses the ICBF National Weight Recording Service to instantly generate a Weight Response Report allowing farmers to identify animals which are below their target weight and promptly introduce supplementary feeding. The service drives uniformity within the herd, improving efficiency of feed utilisation and productivity and increasing profits for the enterprise.

The HerdPlus service has generated an information network that links beef farmers and industry breeders across Ireland, allowing them to make valuable, informed breeding decisions to improve the genetics, performance and profitability of Irish beef herds.

Better cow fertility on John's farm is one key driver behind his profit monitor results (undertaken by Teagasc) being in the top 5% of Irish suckler herds.

**EC** The highest Euro-Star indexed animals fetch on average €250 more at sale of weanling or steer for slaughter than 1-star animals



## Business ethics & supplier relationships

### Best practice communication with partners

In addition to the farm's own best practice initiatives, the Power's work closely with local partners to improve beef quality and farm efficiency. For the past 26 years, the farm has supplied Dawn Meats, and maintains a strong relationship with the local plant. This collaboration provides the farm with relevant knowledge of the market requirements and important feedback from retail, food service and manufacturing sectors.

John is also a committed member of the Agriculture and Food Development Agency (Teagasc) and participates in on-farm research and trials aimed at developing valuable and efficient agricultural systems. An initial five year trial, undertaken almost 20 years ago with Dr Tom Nolan, examined the effects of mixed grazing various species of grasses. Results showed an almost 20% improvement in grass production, utilisation, and weight gains of the stock with a reduction in poaching. This encouraged John to continue his own trials with help from a local Teagasc advisor and a grass seed supplier. These trials have focused on grass species which are drought resistant, quick to establish and provide good ground cover with other attributes such as late maturing varieties. Current research is analysing the potential of novel grass mixtures to improve stock performance and feed efficiency on the farm.

John is also an active member of the new Beef Technology Adoption programme (BTAP) and has been in the East Waterford Discussion Group for over 15 years, which meet regularly to share ideas and best practice. John also holds open days for farmers, where any new research and good practices can be communicated and shared amongst the attendees, with these open days providing a valuable platform for improving agricultural development.



## Environment

### Pollution control

Proper design and positioning of fuel storage containers is essential to prevent fire hazards and minimise the risk of pollution surrounding soils and groundwater. Even minor leaks can cause serious levels of contamination to surface waters and harm to local wildlife, and clean-up of spills can be difficult and costly.

The farm has installed its diesel tank in a disused dairy, sited at a safe distance from transport routes, waterways and other farm equipment. Any leaks or spills are retained within the concrete structure allowing efficient and thorough collection for disposal. Additionally, the building provides added security as the current high fuel price has seen a marked increase in farm fuel theft.

### **Rural Environmental Protection Scheme (REPS)**

The Powers farm is a member of the Rural Environmental Protection Scheme (REPS), which has been designed to promote landscape protection, wildlife conservation and minimise pollution. The scheme requires adherence to 11 primary measures among which include protection of watercourses, maintenance of wildlife habitats and natural vegetation, protection of historical sites of interest, and preservation of the visual appearance of the farm. In addition, management practices must be environmentally sensitive, such as protecting soil nutrient levels across the farm.

The Power's have planted over 300 Ash and Oak trees across the farm, and one hectare of land has been developed into a habitat area that provides important shelter and foraging zones for local wildlife. The farm has also fenced along several waterways which run through the farm to protect them from the cattle. Left exposed, cattle can cause the breakdown of stream-banks through trampling, whilst vegetation removal by grazing further increases the risk of stream-bank erosion. This policy of fencing water courses also stops the obvious effects of pollution from cattle urinating and defecating directly into the water.

The paddock-grazing system which has been implemented by the farm helps achieve some of the primary measures required by REPS and helps prevent / reduce soil erosion, poaching and overgrazing of fields (see page 6).

John has also put up several bird boxes around the farm to encourage nesting birds.

The farm has embraced REPS within its farming system and is successfully meeting the required standards set by the scheme. The farm receives annual grant funding in order to maintain and develop future good practice.

## Appendix

The following matrix has been developed by McDonald's to help assess the sustainability of the agricultural production within the supply chain. Flagship farms have been identified that demonstrate best practice in one or more of the 17 key areas in the matrix, whilst also operating to general high agricultural standards in all other areas.

A ✓ in the matrix below indicates good practices demonstrated in this case study.

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### Ethical (Acceptable Practices)

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**Human health & welfare** ✓  
i Employee health & welfare  
ii Food safety ✓

**Animal health & welfare** ✓  
i Nutrition ✓  
ii Medication & growth promoters  
iii Genetic selection ✓  
iv Animal cloning  
v Husbandry ✓  
vi Transport ✓  
vii Slaughter

**Business ethics & supplier relationships** ✓  
**Rural landscape preservation**

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### Environment (protecting the planet)

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**Climate change**  
i Greenhouse gas emissions  
ii Energy efficiency & renewables

**Natural resources – soil** ✓  
i Soil fertility & health ✓  
ii Soil erosion, desertification & salinisation  
iii Soil contamination

**Natural resources – water** ✓  
i Water pollution ✓  
ii Water usage efficiency

**Natural resources – air**  
i Air emissions

**Agrotechnology**  
i Agrochemical usage  
ii Bioconcentration & persistent organic pollutants  
iii Genetically modified organisms

**Ecosystem protection** ✓  
i High Conservation Value Land (HCVL) ✓  
ii Habitat & species preservation ✓

**Waste** ✓  
i Production waste  
ii Hazardous waste ✓  
iii Waste to landfill

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### Economics (long-term economic viability)

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**Sufficient high quality production** ✓  
i Producer income security & access to market ✓  
ii Agricultural input costs ✓  
iii Crop & livestock disease

**Community investment** ✓  
i Local employment & sourcing ✓  
ii Support for community programmes