



## McDonald's Europe Flagship Farms Beef – Preston Farm, UK

### Introduction

This case study recognises the success of an on-farm breeding programme producing high-quality beef. The benefits of this system include reducing disease risk and prevalence, increasing herd health, producing breeding replacement with good maternal behaviour. This is all undertaken in a manner which protects and enhances the local environment, together these contribute to high standards of ethical, environmental and economic practice.

The key initiatives undertaken at Preston Farm can be summarised as follows:

- The farm is a member of the Quality Meat Scotland farm assurance scheme which is independently audited and certified to ensure high standards of animal welfare and environmental care on the farm.
- Accredited HI Health herd for Bovine Viral Diarrhoea (BVD) achieving disease-free status for a cattle disease associated with costly losses, including increased rates of cow infertility and calf mortality and reduced animal growth rates.
- The suckler herd was reduced in size to enable the farm to rear the young stock through to slaughter, in preference to selling them as store cattle. This policy capitalises on the animals' quality genetics and HI Health status, improving aspects such as food conversion ratios (FCR) and daily liveweight gains (DLWG). Therefore the farm receives the benefits of this approach through increased profits.
- The farm rears their own heifer replacements through a successful on-farm breeding programme. The benefit of this is to be able to select breeding replacements that display the desirable characteristics the farm requires, including good mothering ability, growth, temperament and health. This also greatly reduces the biosecurity risks associated with having to buy in replacement heifers.
- Breeding bulls are carefully selected and sourced from accredited HI health herds to ensure equivalent health status. Easy calving traits are considered an extremely important aspect in the procurement of breeding bulls, especially for those animals that will be used on heifers.
- The farm has an area designated as a Site of Special Scientific Interest (SSSI) and has 12 hectares of wetland that provide an important habitat for the endangered mud snail *Omphiscola Glabra*.
- Preston farm is a member of the McDonald's Sustainable Beef club and as such they have taken part in a four year programme measuring their on farm carbon emissions, through this programme and information gained from the assessments has helped the farm reduce their carbon footprint by 10% over this period.



Joanne and Scott Aitken

“We are a family run business; our upland location lends itself best to stock production. Dedicated to producing quality stock which for over 15 years we have marketed through Scotbeef at Bridge of Allan. We were delighted when McDonald's approached us to become a Flagship Farm. McDonald's recognises and respects the philosophy of our business, ultimately we strive to produce quality beef in harmony with the environment and ensuring future sustainability for our business and our family.

We run a closed herd, only buying in accredited bulls reducing our susceptibility to new diseases and improving the overall health and welfare of our stock. With long term investments being made in buildings and machinery we are insuring our stock are reared and finished to the highest welfare standards.”

Scott Aitken, Preston Farms, Scotland

## Summary of actions and benefits

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

Action		Benefits
Certification / assurance	Farm assured through Quality Meat Scotland	<ul style="list-style-type: none"> <li>EN Ensures that the farm is compliant with environmental requirements and legislation</li> <li>EC Enables the farm to market the cattle as 'assured' ensuring a premium price is achieved</li> <li>ET Ensures the required level of animal welfare, worker welfare and food safety standards are maintained on farm</li> </ul>
	Herd is accredited free from Bovine Viral Diarrhoea (BVD)	<ul style="list-style-type: none"> <li>EC Eradicates potential losses associated with poor reproductive performance, increased calf mortality and reduced growth rates</li> <li>ET Protects cattle from unnecessary suffering and potentially fatal disease outcomes e.g. mucosal disease</li> </ul>
Animal Health	Replacement heifers are selected from within the herd	<ul style="list-style-type: none"> <li>EC Traits selected include fertility, maternal behaviour, milk yield, growth rate and carcass conformation, all of which improve productivity</li> <li>ET Selection of heifers with a quiet temperament ensures staff safety is improved when handling animals</li> <li>ET Eliminates biosecurity risk associated with purchased stock</li> </ul>
	Breeding bulls selected for desirable traits	<ul style="list-style-type: none"> <li>EC Bulls producing smaller off-spring requires less labour input at calving</li> <li>EC Traits for improved growth rates and feed conversion increase animal productivity</li> <li>ET Easy calving bulls are actively selected to reduce the incidence of calving problems, benefitting the health of the dam and calf</li> <li>ET Bulls are sourced from accredited high health herds to limit the introduction of disease onto the farm</li> </ul>
	Good colostrum provision	<ul style="list-style-type: none"> <li>EC Early immune protection provides good health benefits to the calf ensuring productivity is maintained throughout its life</li> <li>ET Improves calf health, reduces morbidity levels and increases calf survival rates</li> </ul>
	Rearing all stock produced on farm through to slaughter	<ul style="list-style-type: none"> <li>EC This capitalises on the animal's higher quality genetics and health status which improves FCR and DLWG and in this respect the farm retains these economic benefits</li> <li>ET Reduces stress on the animals as they are moved direct from the farm of birth to slaughter</li> </ul>
	Compact mating & calving period	<ul style="list-style-type: none"> <li>EC Ensures the necessary attention to detail can be given to cows and calves over a reduced calving period</li> <li>ET Ensures adequate labour availability to protect animal health and welfare</li> </ul>
	Good cattle handling equipment	<ul style="list-style-type: none"> <li>EC Good handling facilities allow routine health checks to be undertaken in a timely and cost-effective manner</li> <li>ET Safer environment for animal handling with reduced incidence of worker and animal injury</li> </ul>
	On-farm feed production	<ul style="list-style-type: none"> <li>EN Locally produced feed and no reliance on imported protein</li> <li>EC Allows costs to be closely monitored and managed</li> <li>ET Excellent feed safety and traceability</li> </ul>
Soil Health	Good slurry and farmyard manure management	<ul style="list-style-type: none"> <li>EN Safe nutrient management protects water courses from contamination</li> <li>EC Reduces purchased fertiliser requirements and costs</li> </ul>

## Climate change

### McDonald's Sustainable Beef Club

- EN The farm has taken part in the McDonald's Carbon Footprinting programme to help measure and identify opportunities to reduce on farm's emissions
- EC Reducing the farms carbon footprint is directly correlated to increasing productivity and profits
- ET The farm is hosting a progressive young farmer on placement

## Biodiversity

### 12 ha of wetland and an area registered as a Site of Special Scientific Interest (SSSI)

- EN Farm provides habitat for the endangered mud snail *Omphiscola Glabra*. The farm has a defined area of high conservation value which is a designated Site of Special Scientific Interest (SSSI)

“Producing high quality beef animals is not down to luck, it's down to hard work, know-how and an eye for detail, and this is certainly what you get at Preston Farm. The Aitken family have a long tradition of running a successful suckler cow herd selling weaned animals to the beef finishing sector. As the focus on improving herd health and genetics started to show clear benefits, the decision was taken to reduce cow numbers and rear all the beef animals through to slaughter. This has allowed the farm to retain the economic benefits provided by the improved genetics and health status of the beef animals.

The management of the farm's land and environment is also impressive, with an area designated as a Site of Special Scientific Interest providing a rare and valuable habitat for an endangered species of snail. Preston Farm shows it is possible to operate and run a successful beef enterprise whilst protecting the natural environment. ”

Karl Williams, Flagship Farms Programme Manager, FAI

“Preston Farm is run on a daily basis by Billy and his sons Scott and John. Purchased in the late 1930's by Billy's grandfather it is a testament to the family that both sons, now fourth generation farmers, continue to follow in the family tradition. Historically a breeding unit marketing all the progeny into the store cattle sector, in 1998 Scott and John with the support and backing of their father and mother, Caroline, altered their breeding program to enable them to finish all their home produced stock. This change in policy required substantial investment, but with foresight and dedication from all the family they operate an agricultural business equipped to face the challenges of the 21st century.

Enabling them to embrace the changes Billy is now regularly found in the farm office, enabling both boys to work day to day on the farm. The values of family are ever evident particularly during the busy periods lambing, calving and harvest when over and above the ever supportive wives and partners, Lynn, Billy and Caroline's daughter, will arrive with her partner Richard to help out.

The pride that Billy and Caroline have in their family, Scott, Joanne, John, Sarah, Lynn and Richard is evident and as a whole they are truly committed to ensuring a sustainable future both financially and environmentally for their family. ”

Lorna Foubister, Scotbeef

## Background

Preston Farm is a family run business consisting of 505 hectares; the farmland is situated at 450–1000ft above sea level in the productive area of West Lothian, Scotland. The Aitken family has owned the farm for 55 years, operating a mixed livestock system of beef cattle and breeding ewes. During the last 20 years, the farm has undergone significant restructuring to promote efficient use of resources and to increase productivity. The suckler herd was reduced in size and where previously weaned animals were sold on as store cattle, these are now retained on farm and finished for slaughter.

The farm now operates a closed suckler herd; with the Aitken family selecting their own replacement heifers from a successful breeding programme that takes into account the animal's genetic merit and health status. The bulls are currently purchased from herds with accredited HI Health status and include Simmental, Limousin, Shorthorns and Devon breeds. Heifers sired by the Simmental bulls are selected as replacements, with emphasis on important traits such as good temperament, growth rates and health.

### Facts: the Scottish farming industry

In Scotland, 80% (6.23 million hectares) of the land is used for agricultural purposes. Most of this land (61%) is unsuitable for arable farming but ideal for ruminant production (The Scottish Government Economic Report on Scottish Agriculture, 2011). Livestock grazing is often the only economic use for land designated as a LFA (Less Favoured Area), and in 2011 livestock production accounted for 42% of the farming sector's fiscal output. Of this, the beef industry is by far the most prominent sector. Last year, Scotland had 459,341 beef cattle on its land, delivering 22% of the profits generated by Scottish agriculture (The Scottish Government, A National Statistics Publication, 2012). Despite the economic importance of the beef industry, over the past decade political and market factors have resulted in declining numbers of Scottish beef herds (QMS report, 2012).



The cows are served naturally over a nine-week interval, it is anticipated that the majority of cows and heifers will be in calf with the intention of achieving a tight calving period in spring. The benefit of achieving a compact calving period is to maximise labour input and reduce cow and calf losses. The cow's calve inside during the spring and are then turned out to grass for the summer months. Weaning of calves takes place in December when the calves are transferred to an indoor unit with rubber-concrete slatting or on straw bedded yards. Young bulls are not turned out to grass in the spring but remain inside in straw bedded yards until they reach the desired slaughter weight.

The animals are fed on a diet that is largely grown on the farm. 120 hectares of arable land provides barley and straw, and some proteins (beans) are supplied by neighbouring farms. Dark grains (a bi-product from the whiskey industry) and sugar beet pulp are purchased locally.

## Certification / assurance



### QMS farm assured

The farm is a member of Quality Meat Scotland (QMS), a scheme directed at ensuring high standards of animal welfare and product quality from the Scottish livestock industry. Annual inspections are carried out to review specific criteria, covering animal welfare, nutrition, traceability, worker health and safety, farm inputs and environmental requirements. Successful farms are rewarded the 'Scotch Beef' blue rosette logo which enables them to market the cattle at a premium.



The QMS rosette allows Preston Farm to sell its cattle at a premium



### HI Health – BVD free

BVD is a viral disease that is transmissible between cattle. Symptoms can range from mild to severe and signs include abortion, infertility, and immunity disorders in calves that render them susceptible to more fatal diseases (e.g. mucosal disease). Maintenance of the virus within the herd results from individual cows that become persistently infected (PI). With proper procedures of monitoring and vaccination, disease control and complete eradication is possible.

Preston Farm began a BVD–vaccination and eradication programme six years ago through the HI Health scheme, they are now BVD free. The obvious financial and health benefits are invaluable to the economics of the enterprise and a key advantage from the perspective of producing their own herd replacements.

The HI Health scheme provides Scottish livestock members with advice, planning and testing services with the goal of improving animal health, welfare, and performance and farm profitability. The HI Health scheme is CHeCS accredited (Cattle Health Certification Standards) which is the self-regulatory body covering cattle health schemes in the UK and Ireland.



Critical losses associated with BVD are reduced and eliminated by following HI Health scheme procedures

### Facts: Prevalence of BVD

Around 40% of cattle herds in Scotland are infected with BVD (Scottish Government) and for affected beef herds the annual economic losses from BVD has been estimated at £37 per cow per year (range £32–£43)

(Source: Gunn et al. 2004 Vet Jr 167:143–149).



## Animal Health

### On-farm breeding programme

Maintenance of breeding cow numbers in the majority of suckler herds involves a yearly replacement rate of around 20% of the herd. These replacement heifers can either be purchased from an external source, such as a livestock auction or another farm, or they can be born and reared on-farm. Selection and development of the replacement heifer is a crucial decision for the future management and profitability of any herd.

Factors that should be considered in whether to breed or buy in replacements include:

- Current and future market prices
- Herd size
- Pastures, facilities, management and available labour
- Herd health – biosecurity
- Cow genetic base – herd quality



Despite initial outlay, home reared heifers cost £130 less than a purchased replacement

The selection of the replacement heifer is a key decision affecting both future management and profitability of the herd. Breeding replacement heifers from the herd's progeny requires adequate resources, feed and labour in order to ensure the successful development of the young calf into a fertile and healthy breeding animal. It is estimated that home reared heifers cost £130\* less than the equivalent replacement animal to purchased.

At Preston Farm, the restructuring of the livestock enterprises has provided the necessary resources to ensure that rearing of young heifers into replacement breeding animals has become a key priority. This is being driven through a successful on-farm breeding programme which is selecting heifers with the ideal traits for the farm and management system.

*\* SAC has produced comparative figures for sourcing herd replacements based on an annual 17% replacement rate, two-year calving and 90% of calves reared. Home-bred beef cows left a gross margin of £130 more than cows bought-in with a calf at foot.*



Buying in heifers can be regarded as a significant biosecurity risk to herd health. Firstly, arriving cattle can carry undiagnosed disease risks, particularly for untreatable diseases with late-presenting symptoms such as Johne's disease or BVD. Additionally, increased genetic variability within the herd from purchased replacements can lead to problems in predicting some of the following; disease susceptibility (and providing effective treatment), temperament, growth rates, and maternal ability.

Good management of the replacement heifer as a yearling has been repeatedly shown to have a crucial effect on her resultant reproductive performance, not only on first calving but throughout the animal's productive life. Inadequate growth during the first 15 months of life has been associated with late or failed conceptions and calving difficulties. Rearing heifers on the farm allows for careful monitoring of the animal's condition and growth rate throughout this critical period, which allows for management changes to ensure growth targets are met.

The key advantage of breeding replacement heifers is the opportunity for selection of desirable, heritable traits for the dam and calf. To produce robust quality calves for rearing, the cows are mated with one of the following breeds; Simmental, Shorthorn or Devon. These all impart characteristics of high fertility, good growth rates and meat quality. The heifers are served at 15 months of age, with the aim to calve down at 2 years of age. To prevent calving difficulties and calf mortality the Simmental heifers go to the Shorthorn bull and the Shorthorn heifers go to the Devon bull. Breeding bulls are evaluated on EBV values and visual appraisal.

As a family-run farm the temperament and docility of the stock is a key factor in the ease of

managing and handling of the herd. The importance of breeding a docile character and good temperament increases the safety of individuals working with the stock. Also the labour requirements to undertake specific management / handling tasks are reduced, as animals are less fractious and unpredictable. Animal health and welfare can also be improved, as animals do not become so stressed and excitable which can lead to injuries and aversive behaviours. Elements such as docility and good temperament become increasingly important as farm labour levels decrease and more farmers find themselves working alone with stock.

Heifers which have calved are kept together in social groups of 30 or more until their second calving when they are integrated with the main herd. This has minimised bullying by older cows, which may harass and intimidate the smaller younger females.

The replacement rate for the Aitkens' herd is running at 20%, which maintains a good balance between cow longevity and introducing new genetics to the herd.

#### **Facts: Estimated Breeding Values (EBVs) for Calving Ease**

There is little correlation between physical characteristics of the sire and the calving difficulty experienced with his offspring. Therefore, suitable "low birth-weight" or "easy-calving" bulls are selected using Estimated Breeding Values (EBVs). An EBV is a measure of the breeding potential for a trait of interest and is calculated from data collected from relatives of the individual, as well as information on the heritability of the trait and the influence of other characteristics.

A bull's EBV for calving ease is given as the percentage of calves born unassisted that are sired only by that bull. A bull with a higher percentage would be selected. Additional EBVs considered for calving ease are birth weight (kg) and gestation length (days) where lower EBVs give lighter, easier calved offspring.



### Desirable trait selection of breeding bulls

The farm selects replacements from the heifers sired by the Simmental bulls. In addition to providing essential traits in beef quality and carcass yield, Simmental bulls frequently confer several desirable characteristics in the female offspring, including fertility, early sexual maturity, docile behaviour and good maternal qualities.

The selection of replacement heifers also assesses the dam, which must be fertile, healthy, easy calving, have excellent maternal qualities and a good milk yield. The aim is to continue breeding cows with these qualities as they help to optimise labour input and expensive veterinary interventions.

**Table 1.** Traits of different breeds of cattle

Characteristic	Cow x			Heifer x
	Simmental	Shorthorn	Devon	Limousin
High, long-term fertility	✓	✓	✓	✓
Longevity	✓	✓		
Early Maturity	✓	✓	✓	✓
Good growth rate	✓	✓	✓	✓
Good feed conversion	✓	✓		✓
Good meat quality and yield	✓	✓	✓	✓
Early finishing				✓
Large Frame	✓			
Good muscling	✓			
Ease of calving	✓	✓	✓	✓
Good Mothering	✓	✓	✓	✓
Milky	✓	✓	✓	✓
Short intervals between calving	✓			
Docile	✓	✓	✓	
Hardiness/Good Grazer	✓	✓	✓	✓
Ease of Handling	✓			

Long-term plans also include selling in-calf replacements with calf at foot. This will take advantage of the superior genetics and health of the stock, which in turn will maximise profit from the enterprise. The farm's BVD-free accreditation and closed herd health status will be an essential element of this endeavour.



### Good colostrum provision

Of particular importance to the health of the calf is the quality and quantity of milk provided by the dam shortly after birth. This first milk (colostrum) provides essential elements that support growth and immune function in the calves to help reduce any disease challenges.

The Aitkens appreciate the importance of providing calves with the optimum quantity of colostrum in a timely manner. Once a cow or heifer has calved, the mother is given a couple of hours to bond with the calf; the calf is then assessed to see if it has suckled. For calves which have consumed no or inadequate levels of colostrum, the dam is milked by hand and the calf is fed via a bottle and teat. This is done before the calf is six hours old and is one of the key checks undertaken on all newly born calves.



### Facts: Colostrum and Calf Health

The dam's first milk, or colostrum, is essential for both the health of the new-born calf and its future development and performance. The colostrum contains nutrients and antibodies that are necessary for the growth and disease protection of the calf. Most notable are immunoglobulins (Igs), complex proteins produced by the cow that function in the protection against specific invading microorganisms. Igs are large molecules that cannot pass to the calf through the placenta. Colostrum must be consumed rapidly post birth before the lining of the calves small intestine has 'closed' and larger molecules are excluded.

During the first six hours succeeding birth, colostrum is very efficiently absorbed into the calf's system, whilst at 24 hours, this capacity to uptake Igs has reduced to only 10%, though defence against intestinal infection is still provided. The colostrum also contains multiple non-immune factors that provide abundant nutritional support for the neonate, including growth factors and high quantities of fats, protein, vitamins and minerals compared with normal milk.

Colostrum management, achieving high circulating Ig levels in the calf, is a key feature in determining neonate health and future productivity. Disease prevention and a strong growth rate are crucial for the high welfare and economic success of the farm, especially when investing resources in the selection of replacement heifers from the farms own progeny. Fostering a herd with strong maternal traits and high milk yields enables the greatest harnessing of colostrum as a natural resource for herd success.

### Breeder finisher

In the last 20 years Preston farm has undergone significant restructuring to improve productivity and efficient use of available resources. Over the last few years the suckler herd was reduced in size from 280 to 220 cows. Where previously all yearlings were sold as store cattle for finishing on other farms, these are now all retained and finished on farm for slaughter.

This development has had several advantages for the farm. The overall management and labour input are reduced due to the requirements of rearing and finishing cattle over that of breeding animals. Also the additional investment undertaken by the farm, such as improving the health of the animals and evolving their genetic potential, can now be utilised and fully exploited by the farm to increase the economics of the beef enterprise.

Another motivation for this approach was to reduce labour requirements whilst decreasing the livestock burden on the pastures. The improvement in soil health and pasture quality has been a big advantage of this change and will undoubtedly help ensure the sustainability of livestock production on the farm.

### Compact mating and calving period

Historically cows and heifers were mated with the bulls over a twelve week time period – this has now been reduced to nine weeks, with all fertile females expected to be mated and pregnant within this period (three cycles). This policy ensures a compact spring calving period and any females which are mated outside this nine week phase are sold to other suckler herds. The herd is currently achieving a conception rate of 93%.



A compact calving period enables closer observation of the calving cows

The benefit of a compact calving period is that it enables regular and close observation of the calving cows during a stage when swift intervention may be essential. This period is extremely stressful and tiring for the Aitkens, so being able to reduce the calving period by three weeks is a massive benefit. This means they are able to maintain an excellent level of vigilance and care for the animals during this crucial time.

Another benefit of a compact calving period is that the calves are all of a similar age; this allows husbandry procedures (vaccinations etc.) to be undertaken on larger groups of animals at the same time, optimising labour input. Extended calving periods produce groups of calves with a wide range of ages (and sizes), which can adversely impact a farm's ability to manage them efficiently and effectively. If, as is the case at Preston Farm, replacement heifers need to be 15 months of age at service, consistent compact calving periods will mean future compact calving periods in their turn.

### Handling and Husbandry

The farm has designed and built a simple but effective cattle-handling system. The design was perfected by the addition of solid boarding which reduces visual distractions to the cattle and provides a clear view of the exit for the cattle which then walk calmly into the cattle crush. This handling system not only improves staff safety and animal welfare, but through ease of handling, ensures that the cost-efficient management of the herd can be maintained, and necessary treatments or vaccinations can be undertaken at the optimum time.

### On farm feed production

50 hectares of the farm's grassland is dedicated to two cuts of silage in early summer, which is then fed to all housed stock over the winter period.

Animals destined for slaughter are fed on a diet of home grown rolled barley, grass silage and straw, with the addition of purchased dark grains (a by-product of whisky production), sugar beet pulp (a by-product of sugar production) and beans (purchased from a local farm). This ration is sustainably sourced (all protein locally sourced and no reliance on soy) and provides a diet which ensures animals reach an ideal slaughter weight and condition within acceptable timescales.

The farm is able to maintain a daily live weight gain of 1.4 kilogrammes per day for heifers and 1.7 kilogrammes per day for bulls. At slaughter heifers are achieving a 54% killing out percentage, with bulls slightly higher at 58%.

## Soil Health

### Soil fertility and water

The beef enterprise generates both solid manure and slurry, both of which are utilised on the farm to improve the productivity of grass and cereal crops. The solid manure comes from the cattle sheds which are straw bedded and this is spread on the arable land prior to being ploughed. The slurry comes from the slatted sheds and is applied to grass fields which are destined for silage production. An application of slurry before first and second cut silage helps increase grassland productivity whilst reducing the requirement of purchased nitrogen.

The farm is about to undertake a regime of soil testing across all fields in 2013 which will be repeated every five years. This will ensure that fertiliser application rates are matched to soil reserves and crop requirements of phosphorus and phosphate. Trace minerals and pH levels are also tested to ensure they are within desired limits for grass and crop production. This optimises fertiliser applications and is especially important when applying large quantities of animal manure / slurry due to its variable nutrient content.



## Climate change

### Carbon footprinting in the Beef Sector

Farmers are under increasing pressure to reduce their environmental footprint and become more efficient at a time when they are feeling the effects of extreme weather conditions and market volatility. There is also a need for them to increase the amount of quality food they produce to help meet the sharp rise in population levels expected over the next 15 years.

As a big customer of British and Irish farming, McDonald's recognised the need to help farmers meet and adapt to these challenges. This ensures that McDonald's can continue to source the quality ingredients needed for their menu which serves more than three million customers daily in the UK.

Four years ago McDonald's UK commissioned the largest study of its kind to map the carbon footprint of the beef sector in Britain and Ireland. This study involved more than 800 carbon assessments on over 200 commercial beef farms, with the data being independently verified by The Carbon Trust. The Aitken farm was part of this study and four annual carbon assessments have been conducted to map the performance of their beef enterprise.

Some of the data collated from Preston farm over the last four years:

- the beef enterprises carbon foot print (kgCO<sub>2</sub>e/kg beef) has reduced by 10% from year one to year four.
- Average calf mortality % over 4 years is 2% – compared to a group average of 5% (50 farms)
- Daily live weight gain (DLWG) has increased over 4 years and average weight of finished animals is 20Kg higher than group average (50 farms)



### McDonald's Sustainable Beef Clubs

From an early stage it was recognised there was a need to assist in knowledge transfer between farmers and to help them adapt to new challenges and share best practise. That's why McDonald's developed the Sustainable Beef Club meetings, which have now been running for three years.

Club meetings are 'Knowledge Transfer' days for beef farmers, focused on improving efficiencies and creating sustainable farm businesses. The meetings take place on farms across the UK and Ireland, bringing together groups of beef farmers to help them to:

- share knowledge & best practice
- benefit from free consultancy
- raise topics for discussion, and identify issues requiring further research
- engage with and inspire other producers to improve their efficiencies and
- have a closer understanding of what consumers want, through involvement with McDonald's

There are currently seven Sustainable Beef Clubs involving over 200 farmers across the UK and Ireland, the Aitken farm is a member of the Scottish Sustainable Beef Club. Each Club meets twice a year, in the spring and autumn. Topics covered include efficiency measures to reduce carbon, grassland management, feed conversion and nutrition.



## Biodiversity

### Site of Specific Scientific Interest (SSSI)

The farm currently has 80 hectares of woodland with plans to plant more trees to improve the aesthetic landscape of the farm, and planting younger trees ensures there is a wide diversity of tree ages across the farm. The aim is to also plant trees in shelterbelts that will provide shade and shelter for the cattle whilst at pasture.

The farm has 12 hectares of wetland which has been designated a Site of Special Scientific Interest (SSSI). The aim of a SSSI designation is to recognise and conserve geological regions harbouring valuable natural habitats and wildlife. The SSSI area on farm is a habitat for the endangered mud snail *Omphiscola Glabra*.

According to the Joint Nature Conservation Committee, there is a substantial threat to the mud snails' highly specialised habitat. The species is generally restricted to small pools, ponds, ditches and marshy areas on uncultivated heaths and commons. These habitats are particularly vulnerable to damage or destruction especially due to nutrient enrichment or improvements in land drainage. It is considered rare but their true distribution is unknown.

(Source: [http://jncc.defra.gov.uk/\\_speciespages/2464.pdf](http://jncc.defra.gov.uk/_speciespages/2464.pdf))

It is a testament to Preston Farm's historic and present land management and practices that the habitats required by the mud snail still exist and thrive today.

## Appendix – Good Practice Matrix for Preston Farm

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.

### Ethical (Acceptable Practices)

**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** ✓

### Environment (protecting the planet)

**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

### Economics (long-term economic viability)

**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 ✓