McDonald's Flagship Farms

Broiler Chicken – Master Good, Baktalórántháza, Hungary

Introduction

This case study demonstrates how the use of modern technology, best practice and good management provide high standards of animal health and welfare and good performance which are underpinned by excellent key performance indicators. The case study also demonstrates the environmental credentials of a system that is engaged throughout the whole of its production system.

The key initiatives undertaken on the Master Good, Baktalórántháza farm are:

- 2015 Key Welfare Indicators (KWIs) are excellent, and a clear demonstration that the focus on management, technology and innovation is having a positive impact. These are fundamental elements to monitoring, managing and advancing bird health and welfare whilst underpinning and improving the farm's economic performance.
- The chickens are housed in environmentally controlled buildings and are provided with environmental enrichment. Within the buildings there are excellent natural light levels from windows running the length of the sheds. The birds are also provided with additional enrichment in the form of metal platforms, wooden perches, bags of pelletised straw, cardboard boxes and hemp strings hung from the feed lines. These enrichments are important for increasing bird activity and helping enable the birds to exhibit and perform their natural behaviours.
- Straw pellets are used as the litter material; the main benefit being that it has a higher moisture absorbency capacity than wood shavings or any other litter material. This is an important factor in helping to achieve the excellent KWIs, such as no incidence of pododermatitis or hock burn in 2015. The straw for the pellets is sourced from local farms which are growing some of the cereals used in the poultry feed. The straw is chopped, cleaned, heat treated and pelletised to create a safe sterilised product.
- The business has invested in excellent staff facilities on site and provides comprehensive training on topics such as bird health, welfare and management. This has helped staff acquire new skills and increases their contribution to the business. Investing in staff and their training keeps them motivated and aids employee retention.
- The used litter is removed from the farm and taken to a company owned facility which processes it through a composting system over a two week period. The finished product is then heat treated, dried and pelletised before being sold as an organic fertiliser to the farms supplying the business with cereals and straw.
- The broiler houses are heated using modern gas heaters. The emissions from these systems are released outside the building through an exhaust system which pre–heats the incoming air, reducing gas use by an average of 5%. Environmental conditions within the building are also improved as the moisture and carbon dioxide from gas combustion are directed outside the building.

> "Master Good Baktalórántháza is an excellent example of a farm where management, mechanization and use of technology can reduce environmental impact, increase welfare and produce an excellent quality product. Management recognizes that investing time and resources in employees means motivated staff who take pride in their work and show concern for the animals in their care. Innovation in sourcing and processing waste products has brought important factors of the production cycle under the farm's control. A modern innovative approach and progressive practical farming is what makes Baktalórántháza a McDonald's Flagship Farm."
>
> Karl Williams, Flagship Farms Programme Director, FAI Farms.

Summary of actions and benefits

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

Action		Benefits
Assurance & Certification	**Member of GLOBAL G.A.P**	EN EC ET Ensures the farm works to a good level of environmental protection and animal & worker welfare is protected, generating customer confidence and increaseing market value of the birds
Management	**Video Camera Monitoring**	EN EC ET Video cameras are installed in the houses so that activity can be observed 24 hours a day, without entering the houses and disturbing the birds
Water Management	**On Farm Borehole**	EN EC ET Water is sourced from a borehole on the farm which is tested and treated prior to usage
Soil Management	**Poultry Litter Converted to Fertiliser**	EN EC ET The used poultry litter is taken to a facility and composted for two weeks then dried and pelleted to produce fertiliser which is used by local farms supplying cereals and straw to the integration
Animal Health and Welfare	**Excellent Key Performance Indicators**	EN EC ET KPIs are measured on farm for each flock including water and feed consumption. Key Welfare Indicators are measured in the slaughterhouse for each flock including hock burns and antibiotic use
	Natural Light Provision	ET EN The houses have windows, which equate to 3.5% of the floor area and, due to their position, provide good distribution throughout the building
	Bird Enrichment Provision	ET EC The birds are provided with platforms, perches, hemp strings, bags of straw pellets and cardboard boxes so they can exhibit natural behaviours
	Reducing Antibiotic Use	EN EC ET The focus on preventative health programmes to reduce antibiotic use has shown good results over the last 5 years of the integration
	Automatically Controlled Ventilation	EN EC ET Optimum environmental conditions are maintained for the birds using a range of equipment to control temperature levels and ventilation
Environment	**Heating System**	EN EC The system heats incoming air via the use of exhaust gases. This has reduced gas use by 5%
	Artificial Lighting	EN EC ET Light sensor system fitted in two houses controls artificial lighting when the natural light falls below 20 lux. If successful, then all houses will be equipped

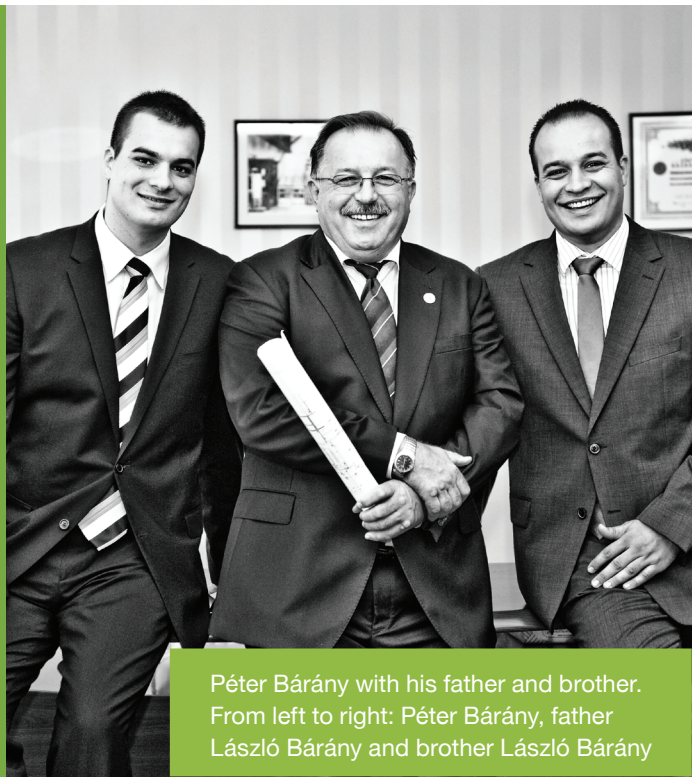
	Feed Source	EN EC ET	A significant percentage of the feed raw materials are either grown on 5,500 hectares of fields integrated by the company or purchased from local farms
	Reducing Soy Use	EN EC	The business is replacing some soya in the diet with rapeseed meal
	House Design	EN EC	The houses are well insulated and also include insulated window shutters to help maintain a constant internal building temperature as conditions in Hungary can vary from –25°C in the winter to 40°C in the summer
Human Welfare	**Staff Facilities**	EC ET	The site includes a well–equipped and comfortable social room for the staff
Community Investment	**Park and Football**	EC ET	The business has supported the rebuilding of a public park in Kisvarda and supports the local football team
Community Support	**Education**	EC ET	The business works in cooperation with the local secondary school and the University of Debrecen to help teach skills to possible future employees

"It is a great honor to be selected to be part of the McDonald's Flagship Farm Project. Our whole team has worked very hard to establish Baktalórántháza and have made extra efforts to achieve this status – it makes us all very proud.

With this project we wanted to show that we can fulfill the expectations of our customers and industry on issues of biosecurity, animal welfare & health without compromising on environmentally friendly production and ecomonic viability.

This was the vision when we started the design of this farm and has been our target from the beginning. It has taken a lot of work, but it has been worth it, because it provides something we can all learn a lot from in the future."

Péter Bárány, Managing Director,
Baromfi–Coop Kft



Péter Bárány with his father and brother. From left to right: Péter Bárány, father László Bárány and brother László Bárány

Background

The Master Good Group is owned by the Bárány family, who have a tradition of poultry breeding going back to 1907. The Group comprises of two companies, Master Good Kft, which manages the abattoir and further processing, and Baromfi–Coop, which manages all the agricultural activities.

The state–of–the–art broiler farm was built in 2015 and is located in North East Hungary, near Baktalórántháza. This region produces around 45% of Hungary's total poultry production. The aim was to build a modern and innovative farm which has technology, animal health & welfare and efficiency at its heart.

Here Péter Bárány explains more about the farming operation:

Why are you developing your own farms?

We have full transparency and control within the whole production chain; this enables us to achieve production efficacy and means we are able to provide our customers with the best quality products. Developing our own farms makes it possible to further optimise and fine–tune the production process.

What benefits does this provide to the business?

All these activities provide an excellent opportunity to incorporate techniques and practices within our farming and slaughterhouse operations that drive efficiencies and makes us more sustainable.

You are building new broiler housing; why is the farm layout important?

The layout of the farm is unusual as there is one corridor which connects all 10 houses. The concept is that once staff (or visitors) have showered and changed into dedicated farm clothing and footwear they do not go outside the building again; this prevents any external contamination entering the houses. There is also a separate changing room and shower area for the catching team which avoids any cross contamination issues. This provides us with very good biosecurity, and protects the health of the birds.

EC
EN
ET

Good biosecurity design limits potential disease entry onto the unit.

How are you controlling the environment for the birds?

We have invested in a computer system that monitors and controls ventilation levels, including heating, humidity levels, air pressure and cooling which are maintained to pre–set parameters.

The summer temperatures can get quite high so we invested in a cooling system for ventilation. The computer manages the activation of evaporative cooling panels, optimising water use and duration of cooling. This ensures we are able to maintain ventilation levels during periods of warm weather.

We also manually measure ammonia, carbon dioxide and carbon monoxide levels and adjust the ventilation programme if set values are exceeded.

EC EN ET

The building's heating system pre-heats incoming air and has reduced gas use by 5%.

Heat is provided by state–of–the–art gas heaters that expel combustion gases out of the building via an exhaust system, which also pre–heats incoming air; this reduces gas usage by 5%. By ensuring combustion gases are expelled from the house carbon dioxide and carbon monoxide levels are not increased and moisture produced through the combustion of gas does not increase building humidity, which can impact litter quality.

Ventilation ducts

What are the benefits of good envrionmental control?

The environment has a considerable impact on the birds' health and welfare. Poor air quality can affect the bird's respiratory system, impacting their health and increasing mortality rates.

Ensuring that humidity and ventilation are optimised we can ensure the quality of the litter within our houses is very dry and friable, the KWI's measured and recorded at the slaughter plant show we have extremely low levels of hock burn, pododermatitis and breast blisters, demonstrating the system is working well.

The dry and friable nature of the litter also enables the birds to exhibit natural behaviours such as scratching and dust bathing.

ET

KWIs report negligible incidence of hock burn, pododermatitis and breast blisters.

How do you provide light for the birds?

All the houses have windows positioned along the full length of the building at the top of the side–wall. The positioning of windows is a key factor to help optimise natural light entry and distribution within the house. The area of the windows is equivalent to approximately 3.5% of the floor area. We have seen the birds respond well to natural light, increasing their activity levels and natural behaviours.

In two of the houses we are trialling a light sensor which controls the artificial lights. The artificial lights are automatically switched on when light levels in the building are less than 20 lux.

EC
EN
ET

Scientific consensus agrees that light facilitates:

- Sight which is a necessity for searching for food
- Entrains the circadian cycle
- Initiates and regulates the release of multiple hormones which are essential in metabolic regulation, reproduction and bone formation.

What enrichment do you use in the houses and how is it beneficial to the birds?

The houses are also equipped with objects such as wooden perches, cardboard boxes and bags filled with pelletised straw. This allows the birds several options for perching and elevating themselves above the flock.

There are strings made from hemp tied to the feeder lines which allows exploratory pecking behaviour, and they maintain the bird's interest, unlike other objects.

Metal platforms with ramps have been constructed and placed around the building; these provide the birds with the ability to elevate themselves, perch and dust bath – important behavioural needs.

The platforms have limestone powder placed in them which allows the birds to dust bath and they also consume a small amount which provides additional calcium in their diet. The area under the platform is shaded and provides reduced light levels, this is used by the birds for resting and sleeping.

All of this enrichment allows the birds to express their natural behaviours, increasing activity with the aim of improving health and welfare.

ET

Enrichment in the form of natural light, perches, pecking objects and platforms ensures the birds are able to express natural behaviours.

Wooden perches

ET

In–house cameras allow birds to be monitored remotely whenever necessary.

How often are the birds inspected throughout the day?

We inspect the birds at least twice a day, with staff taking care to walk the whole house and check the health and welfare of the flock.

There is also a camera system in the houses which enables us to monitor and inspect the birds without disturbing them. The system can be remotely accessed by the farm team within the unit office or by senior managers off–site.

CCTV monitoring

What management information do you record?

Management information is recorded daily including mortality, culls, feed consumption, water usage, water–feed ratio, temperature and humidity. These are monitored to identify any changes which may indicate a sub–clinical disease challenge.

How do you use this information to change management practices?

Management information helps to make effective decisions to support all ongoing operations e.g: to optimise the environmental conditions within the growing period by taking account of outside weather conditions. Furthermore, the recorded information provides data for smart decision–making about changes e.g: water–feed ratio.

How do you manage the health of the birds?

The business has developed a vaccination programme to improve animal health and reduce disease challenges. The programme is drawn up by our own specialist poultry veterinary surgeon.

What other ways are you improving bird health?

Master Good has a vertical integration (with own parent stock) – this gives distinct advantages such setting up our own breeding and health/vaccination programme.

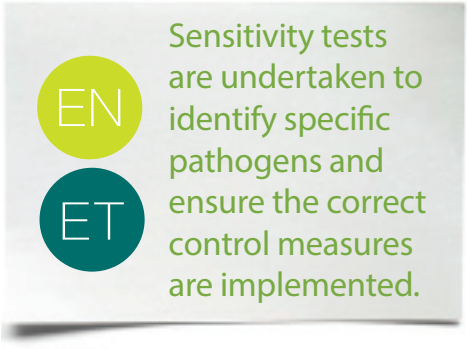
The company has its own nutritionist who works with Aviagen to ensure that the diet meets the nutritional requirement of the birds, whilst working with probiotics to enhance the gut stability. There is a strong focus on water which is checked for cleanliness and microbiological performance.

There is an in–house veterinary team providing advice and diagnosis services for birds to maintain their health & welfare.

The straw pellets and feed are heat–treated to prevent the introduction of Salmonella or any other zoonotic agent; between flocks the houses are cleaned and disinfected. The effectiveness of the cleaning is verified regularly by microbiological swabbing.

If birds appear sick what is the procedure?

First of all, the previous 5–7 days' data flock chart including percentage of culled birds, mortality, feed consumption, water consumption, water–feed ratio and the climate conditions must be checked. Furthermore, the activity in the flock and each bird's feather and comb colour will be checked. All this information will be given to the vets. Post–mortem examinations will be undertaken by the vets to determine a diagnosis and identify the challenge. Where necessary, a sensitivity test will be carried out to identify the specific pathogen causing the disease, only after this is antibiotic usage possible. Antimicrobial sensitivity testing allows vets to choose antibiotics that will be most effective against the specific types of bacteria. The results of antimicrobial sensitivity testing are combined with clinical information and experience when selecting the most appropriate antibiotic for the birds. This approach to disease treatment therefore allows for optimal use of antibiotics, reducing the chance of the development of antibiotic resistance alongside improving therapeutic success.



Tell us about the other parts of the business. How do they complement the broiler enterprise?

The business operates two feed mills which utilise raw materials grown on integrated farmlands or purchased from local farms. As the feed mills are part of the company the performance of the diet is monitored.

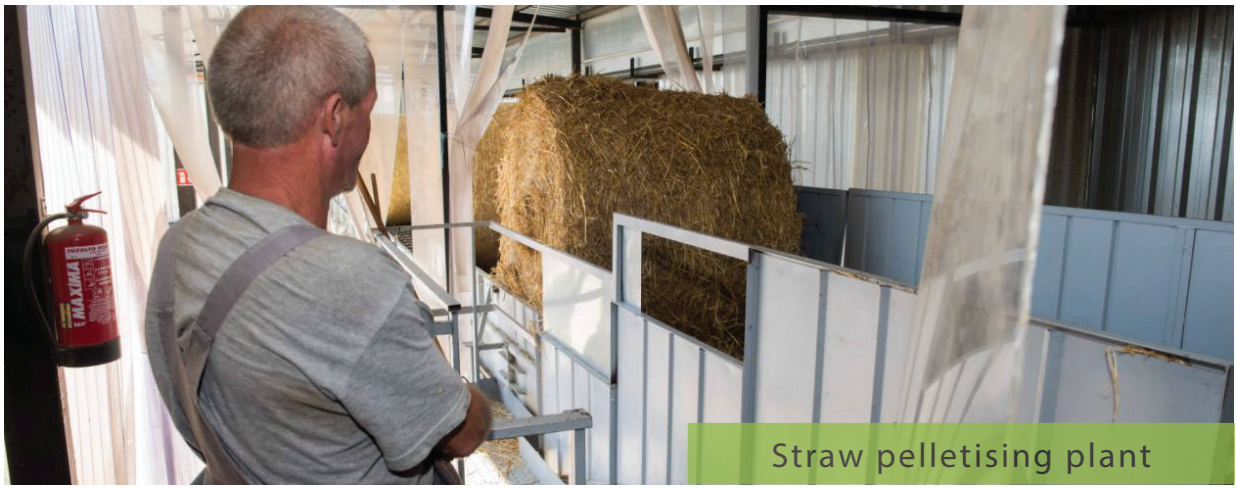
The manure fermentation plant utilises the used litter from the farm to produce fertiliser that is then used on the integrated farmlands used to grow raw materials for the feed mills.

The slaughterhouse is part of the group which enables key welfare indicators to be communicated back to the farm.

What further improvements or developments are you hoping to make in the future?

The business is planning to equip the farm with solar panels which can provide 20% of the electrical energy usage of the farm.

Used litter processing



Straw pelletising plant

What is the difference between the working conditions on this farm compared to the other farms in the Master Good`s integration?

All houses are equipped with feeding and drinking lines which are lifted up electrically. There are computer–controlled data measuring systems in place e.g: for humidity, temperature, light sensors, etc. which facilitate effective management. Because the workers are moving in a closed corridor system, they are not affected by the external climate extremes (rain, snow, extreme heat, extreme cold, wind).

The straw litter pellets are transported into the house prior to chick placement, using the feeding lines. The rumps of the pan feeders are removed from the feeder line and straw pellets are blown into the feed silos and delivered straight into the building. Following this they are spread around by staff, saving a significant amount of time and effort.

EC

EN

ET

Straw pellets used for the litter is deposited into the buildings via the feeder lines.

Feeding lines are used to blow straw pellets directly into houses

What methods are in place at Master Good, Baktalórántháza to reduce the farm's environmental impact?

The high insulation level through the valued sandwich panels for walls and ceiling, the energy–saving designed ventilation and modern heat–insulated shutter systems, as well as energy–saving light bulbs, results in significantly less electricity consumption, which has a positive impact on the environment.

Furthermore, the windows orientation and position allows for the use of sunlight during the day which increases the energy efficiency of the farm and reduces our environmental footprint. Artificial light is provided only when it is necessary.

Further benefits are: short distances to slaughterhouse; feed mills and hatchery; trucks used are in Euro 5 and 6 classes; most of the raw materials originate from EU while 70% are purchased from local farmers.

Appendix 1– Good Practice Matrix Baktalórántháza

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) ET

Human health & welfare

i Employee health & welfare ✓
ii Food safety ✓

Animal health & welfare

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

Business ethics & supplier relationships

i. Rural Landscape preservation

Environment (protecting the planet) EN

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 ✓

Waste

i Production waste ✓
ii Hazardous waste
iii Waste to landfill

Natural resources – water

i Water pollution
ii Water usage efficiency ✓

Natural resources – air

i Air emissions ✓

Ecosystem protection

i High Conservation Value Land (HCVL)
ii Habitat & species preservation

Agrotechnology

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

Economics (long–term economic viability) EC

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 ✓