



## Nuffield Poultry Study Group

Argentina 18th – 26th November 2011

**Helen Houghton**

Sponsored by:



## **Acknowledgements**

The Nuffield Poultry Study Group would like to thank all those who helped to make the 2011 Study Tour to Argentina such an enjoyable visit.

We are very grateful to Andrew Hignett for organising the visit and to Hy-Line International's Diageo Fux for looking after us all so well in Argentina.

The group was sponsored by Hy-Line, Pfizer Sanidad Animal Global Poultry, Moba, Grupo Motta and Merial. We would like to thank them for their financial support as well as all our hosts for their kind hospitality.

## Contents

	<i>Page</i>
Acknowledgements	2
Introduction	4
Itinerary Overview	4
Visit reports	5 – 16
Conclusions	17

## Introduction

In November 2011 the Nuffield Poultry Study Group visited Argentina to gain an understanding of the Argentine poultry and egg markets and to learn about a fascinating country.

Argentina is vast country covering 2.8 million Km<sup>2</sup> with a population of 40.1 million, of which 12.8 million people live in Buenos Aires.

There are 573 million broilers and 35 million layers in the country and most are concentrated in the provinces of Buenos Aires and Entre Rios. Argentina is self-sufficient in chicken meat and eggs, but has excelled in exporting bespoke meat and egg products around the globe.

High inflation and high export taxes have affected many agricultural businesses including the famous beef industry. However, many entrepreneurs have taken advantage of the availability of land, home grown feed and low export taxes for poultry meat (0%) and egg products (5%), to grow Argentina's poultry industry.

## Itinerary Overview

Friday 18 <sup>th</sup> November	Travel to Buenos Aires
Saturday 19 <sup>th</sup> November	Arrive in Buenos Aires, lunch and tour of Buenos Aires City
Sunday 20 <sup>th</sup> November	Visit La Bamba de Areco Farm Visit to Antonio de Areco town
Monday 21 <sup>st</sup> November	Visit to Mercado de Liniers live cattle market Visit to Lisandro de la Torre museum Meeting at the British Embassy Meeting with Cargill
Tuesday 22 <sup>nd</sup> November	Travel to Parana, Entre Rios
Wednesday 23 <sup>rd</sup> November	Visit to Grupo Motta Visit to the hatchery, CALISA Complejo Alimentario S.A (chicken processing plant), ASADO (cooked processing plant) and feed mill Meeting with Grupo Motta at central office Visit to a pullet rearing unit Visit to a broiler unit Dinner kindly sponsored by Hy-Line International
Thursday 24 <sup>th</sup> November	Travel to Buenos Aires Tango dinner kindly sponsored by Pfizer
Friday 25 <sup>th</sup> November	Travel to Brandsen, Buenos Aires Visit to Ovobrand feed mill, layer unit and egg processing factory Lunch courtesy of Ovobrand Trip to Tigre, Buenos Aires for Delta Tour

Dinner sponsored by Moba BV

Saturday 26<sup>th</sup> November

Return to UK

## **Monday 21st November**

### **Visit to Mercado de Liniers live cattle market**

We visited an enormous cattle market in the centre of Buenos Aires city to learn about Argentina's famous beef industry.

#### Key points

- The market was started in 1900 is it spread over 31 hectares, has 450 corals for cattle, has 32 weigh scales, is filmed for online buyers and provides income for 2400 families.
- In 1995 the market was privatised by 55 buyers, 10, 000 cattle can be sold each day and 4% commission is taken by the market.
- For each sale, the cattle arrive overnight (from 6pm to 5am) in lorries and as many as 400 lorries can deliver cattle into the market which are divided into groups to be sold as lots. The average weight of each lot must be a minimum of 300Kg per beast and penalties exist for any beast found to be less than 300Kg.
- The cattle sold at this market all go direct for slaughter for consumption within Argentina
- Beef for export is sold direct from farms via on line auctions to slaughter houses
- On the day we visited the market, 1400 cattle were being sold. Cattle were moved around the market by stockman on horseback, whilst sellers and potential buyers viewed the cattle from above via a series of elevated walkways. The lowest price achieved was 9.20 peso (£1.53) per Kg and the highest price fetched 10.30 peso (£1.72) per Kg live bodyweight. These prices were very similar to UK current prices of 157.8p/kg live weight for light steers weighing 370 – 464Kg.

### **Visit to Lisandro de la Torre museum**

#### Key points

- At the museum we learnt about when the Spanish conquered Argentina they discovered no gold or silver and a very barren landscape. The Spanish brought with them cows and horses and planted trees.
- The invention of the fence changed agriculture in Argentina, allowing areas to be fenced off for cultivation of crops and management of cattle and horses. Fencing wire was brought by the English, allowing much larger areas to be fenced off, as wood was still scarce. Barbed wire was imported from USA, but soon abandoned as the barbs damaged cattle coats reducing the value of the all-important leather.
- In 1850 meat was salted and exported to Brazil and USA to feed their slaves.
- In 1870 Tellier, a French man, invented the process of chilling meat allowing meat to be stored for longer periods. However, the first shipment of meat to EU was a disaster as the ice melted before the ship arrived at its destination and the meat was spoiled.
- Another Frenchman invented the process of freezing meat to -30°C allowing the export of meat around the world.

### **Meeting with British Embassy in Buenos Aires**

We had an excellent meeting with The British Embassy's Argentine Trade and Investment team.

Alfredo Fierro gave an overview of how to do business in Argentina and Mercedes Orteli gave a very informative talk about the Argentine Poultry Industry. They both openly answered questions regarding the Argentine political and economic situation.

## Key points

### **How to Do Business in Argentina – Alfredo Fierro. [alfredo.fierro@fco.gov.uk](mailto:alfredo.fierro@fco.gov.uk)**

- Argentina is a massive country of 2.8 million Km<sup>2</sup>. From top to bottom it is the same distance as from London to Bagdad and the province of Buenos Aires is the same size as France.
- Population is 40.1 million, with 12.8 million people living in Buenos Aires the 13<sup>th</sup> largest city in the world. 1.3 million people live in Cordoba and 1.2 million in Rosario.
- Argentina has the 22<sup>nd</sup> largest economy in the world, twice the size of Chile and 3 times the size of Finland's economy. The economy is growing as a rate of 9.2% in 2010, 6% in 2011 with an average of 7.1% over 2002-2010
- Argentina has the highest average per capita income of all the South American countries of US\$ 14,000. Residents in the City of Buenos Aires earn on average US\$ 39,520 per capita this is higher than UK average income per capita of US\$ 38,000.
- The currency is Pesos, but all economics are measured in US dollars
- Argentina has been a democracy since 1983. Prior to that it was ruled by Military Junta. The President is Cristina Fernandez, who followed on from her husband Nestor Kirchner in December 2007 and she has been re-elected for another 4 year term starting in December 2011.
- Argentina has no foreign debt as their IMF debt was paid off in January 2006. The rest of Argentina's debt is with private creditors. Argentina has an all-time record International Reserve of US\$ 52 billion and an estimated Paris Club debt of US\$6 billion that it would like to repay, but that would require a review by the IMF, of which Argentina is no longer a part of.
- Interestingly it is estimated that US\$147,000 million is outside Argentina's financial system.
- Argentina exports more than it in imports, with exports of US\$ 68.5 billion and imports of US\$ 56.4 billion in 2010. Exports are 25% to the Mercosur countries 19% to Asia, 16% to Europe, 9% to North America, 7% to Latin America, 7% to Chile and then 17% to other countries. Imports are 24% from Mercosur, 21% Asia, 17% from Europe, 15% from North America, 2% from Chile, 1% from Latin America and then 10% from other countries.
- The Mercosur (or Mercosul) countries were established in 1991 and consist of Argentina, Brazil, Uruguay, Paraguay and Venezuela (who joined in 2006) between which no trade duties exist. Associate Mercosur members Bolivia (since 1997), Chile (1996), Colombia (2004), Ecuador (2004) and Peru (2003) have reduced trade duties and Mexico acts as an observer. Trade duties range from 0 to 32 % with an average of 14 %
- Exports to UK in 2010 were 40% up on 2009 and the UK is 11th largest investor in Argentina with approximately 120 UK companies (est. £2.1bn of FDI stock) doing business in Argentina.
- Argentina is in the Top Ten of World Producers of 26 Agricultural Commodities such as: Artichokes, Beeswax, Canary Seed, Chicken, Flax Fibre, Game Meat, Grapefruit, Grapes, Groundnut, Honey, Horse Meat, Lemon and Limes, Linseed, Maize, Matte (herb tea), Meat, Pears, Peppermint, Quince, String Beans, Sorghum, Sugarcane, Sunflower Seed, Tea, Tobacco and Wool
- Argentine growth in industries: Automotive Production: 40% up to 720,000 units (2010), IT market: 25% up to US\$ 5,386 million (2010), Mining Production: 63% up to US\$ 6,822 million (2010), Pharmaceutical market: 30% up to US\$ 437 million (2010), Security market: 25% up to US\$ 4,500 million (2010), Steel production: 28% up to 5,138 tonnes (2010), Telecomms market: 18% up to US\$ 9,770 million (2010)
- Argentine Exports: 24% up to US\$ 68,500 million (2010)
- Tips for doing business with Argentina included having a local Spanish Interface, doing all business in US dollars, avoiding the judiciary as this is a very time consuming process, always having a contract and dealing with any legal issues in another country outside of Argentina such as The Netherlands. Inflation is 25% and so offering finance deals and charging for them

are very attractive to Argentine business where 30 – 40% advance payments are common. Offering training in the EU is a very good way of helping to seal a deal. The British Embassy Trade and Investment Section are always very helpful in making contacts and helping with advice regarding how to conduct successful business in Argentina.

### **The Argentine Poultry Industry - Mercedes Orteli mercedes.orteli@fco.gov.uk**

- Argentina is one of the major food producers in the world. Currently, Argentina produces food for 430 million people.
- In 2010, agricultural exports reached £21,850 million representing over 30% of Argentina's GDP, and over 50% of the country's income from exports.
- In the last 30 years Argentina has tripled its production of agricultural products using 13% of its arable land. The cultivated area grew 50% and production increased by 270%
- The poultry industry is concentrated in two provinces: Buenos Aires and Entre Rios, home to 90% of the broiler farms and 66% of the layer farms
- In 2010, Argentina's poultry industry has grown by 8.5% year on year, investing over £50 million in 2010. Four of the biggest companies, represent 50% of the market and they expect a 33% increase in production from these investments.
- The poultry sector has grown exponentially in the last 7 years experiencing a 117% growth from 760.000 tonnes of chicken meat produced in 2003 to 1.7 million tonnes in 2010.
- The Chamber of Poultry Companies (CEPA) estimates that in the period 2011-2017 the industry will show an annual growth of 6% for meat production and 4% year on year for egg production.
- Argentina is the 6<sup>th</sup> world exporter of chicken meat, exporting 430.000 tonnes to over 60 countries in 2010. Main export destinations are Chile, China, Europe and Venezuela.
- 8 farms produce grandparents for chicken meat and 2 farms produce grandparents for layers. There are 301 breeding farms, 80 hatcheries, 108 parent farms, 1131 layer farms and 4067 broiler farms in total in Argentina.
- In Argentina's broiler industry 10 companies own more than 2000 farms and represent 57% of the industry and is an integrated system with processing companies coordinating with the breeding farms either by owning them or by having exclusive deals. Rearing farms supply the infrastructure, labour, heat and electricity with the processing companies provide the rest (day old chicks, feed, veterinary medicines etc.)
- The Argentine Poultry Industry aims to produce 2.5 million tonnes of chicken meat and export 600,000 tonnes by 2017 to become the second world exporter after Brazil helped by the fact that Argentina is certified to be free of avian influenza and Newcastle disease. Export of poultry meat has changed from whole birds to chicken meat portions.
- The Argentine Government supports subsidies on grains (already low price in internal market due to export taxes and quotas). Soya and wheat crops in Argentina are GM, with some non GM crops grown for poultry products for EU markets.
- Export tax of many agricultural products is 33%, chicken meat has no export tax and beef export tax is under quota.
- In the last 20 years, the broiler industry has grown from 173 million to 573 million birds an increase of 231% with an increase in internal demand as Argentina consumes 37Kg of chicken meat per capita per year.
- The egg sector has experienced a constant growth in the past decade, from 17 million layers in 2002 to 35 million layers in 2011. Egg consumption grown from 135 to 210 eggs per capita per year in 10 years.
- Argentina produces approximately 60,000 tonnes of egg products per year, by 10 companies with export licences that amount to 78% of the market share. In 2010 1.3 million eggs entered the egg plants with SENASA authorization 26% more than in 2009.

### General Discussion

- The poultry meat industry is growing in Argentina more than the egg market, with Brazil being the top importer of Argentine poultry meat.
- Income tax is approximately 33%, the highest is 35% and can be 30% for top earners (the opposite scale to the UK). Employment is less than 6%
- Healthcare is free, 6-7% of GDP is paid out in healthcare, private healthcare is also available
- The Falkland Isles (known as Las Malvinas and always stated as Argentine on any map we saw) is a topic that no Argentines will wish to discuss with the British, particularly in light of the 30<sup>th</sup> Anniversary of the Falklands' Conflict in 2012 and Prince William's impending visit. The UK's Government position is that the residents (approximately 2000) can choose if they wish to belong to the UK or to Argentina and the Argentine view is that the Islands should belong to Argentina, but that no Argentines live on the Islands anymore to influence any vote. Possible results of oil explorations will also affect decisions.
- Argentina has the world's largest shale gas reserves, there is little wind energy production and most energy is produced from fossil fuels.
- All Argentina's laying birds are in cages with no welfare restrictions.
- Argentina produces wine from the Mendoza area using artificial irrigation as most of Argentina's water is underground. Wine is exported to the UK and EU. Their biggest risk to the grape crop is hail damage.
- Agriculture receives no subsidies from the Argentine Government and with exports taxed as much as 35% this can create barriers for small producers.
- The sowing of soya and wheat are rotated requiring no fertiliser and with underground water reserves drought is very rarely a problem.
- Buenos Aires port is approximately 300/400km from the growing regions providing excellent routes for export.
- 70% of retail is through big supermarkets such as Carrefour and Carrefour Express (French), Disco (Chilean) and 10% of supermarkets are small Chinese supermarkets – the equivalent of the UK corner shops, selling basic products almost 24 hours a day.
- No animal feed is allowed to be imported from the EU or USA as imported processed animal protein is banned. This has caused problems for the very lucrative sport of polo, where ponies are brought into Argentina, but are not allowed to bring their feed with them.

### Meeting With Cargill Argentina

Vice President of Cargill Argentina, Jorge. O. Amado and Gustavo Kahl gave us interesting insight into Cargill as a global company and Argentina's role within the company.

### Key Points

- In 1947 Cargill Argentina was Cargill's first agribusiness set up outside of the USA and was a seed production business that ceased in 2000
- 90% of Cargill Argentina's wheat, maize and soyabean is for export and has the largest crushing and milling businesses within Argentina.
- Cargill is No. 1 with a joint venture for maize milling, No.2 for malt production and wheat milling and No.3 for biodiesel production from maize in Argentina. 95% of the biodiesel produced is exported and Cargill is not happy with converting food into fuel, but feels it needs to be present in the biofuel sector.
- Cargill has a new joint venture to grow "Stevia" a native grass that be processed to form a natural sweetener without any calories in N E Argentina. The grass originates from Paraguay.
- Cargill Argentina produces: grain and oilseed that are exported globally, malt is sold in

Argentina and exported to Brazil and globally, flour is produced for Argentina only and starches and sweeteners are produced in a joint venture with Ledesma.

- Cargill Argentina has 3300 employees, 3 maltings, 4 crushing plants, 7 wheat mills, 1 maize mill, 60 elevators, 6 ports and 2 offices in Buenos Aires and Rosario.
- Sales are UD\$ 5 billion of which UD\$4.3 billion is made from exports to 70 countries.
- The crushing plant produces 13,000 tonnes per day of soya which 12 billion tonnes were exported in 2011
- When Cargill purchases wheat, maize or soya from a farmer for export purposes, the export tax is deducted from the purchase price. Soya has an export tax of 35% and if such tax was abolished then the amount of soya Cargill would export from Argentina would rise dramatically. The export tax on wheat is 23% and maize 20% and there are no export taxes when selling to Brazil.
- Most soya, corn and wheat is grown in the La Pampas area of Argentina, which suffered a drought in 2009. Farmers sell to a dealer or coop who then sells to a broker or buyer (such as Cargill) who then exports the product. 30-40% of crops are sold through a coop.
- Currently the price for whole soyabean is 200 pesos (£33.33)/tonne, wheat is 700 pesos (£166.67) per tonne and corn 700 pesos (£166.67) per tonne. (£1 = 6 peso). Soyabean prices are relatively stable, with maize prices rising.
- Harvests can now be stored in large Agbags, packed and sealed to exclude oxygen and so maintain grain in excellent condition. These bags have allowed farmer to keep crops until prices improve. Care of the bags must be taken during the hail season and once a bag is opened its contents must be used fairly quickly.
- Cargill has no poultry, beef or pork production businesses in Argentina anymore. Cargill closed its Argentine Poultry Business in the mid 1990's.
- Argentine meat consumption in 2009 were: beef 70kg per capita, poultry 32Kg per capita and pork (as cold cuts) 9Kg per capita. In 2011: beef 48-51 kg per capita, poultry 40Kg per capita and pork (as fresh pork meat) 13Kg per capita. The price of beef was below that of chicken and that has now changed. Cattle production was 60 million head and is now 48 million head as the price has risen from US\$ 0.8 to US\$ 2 per Kg.
- Government export taxes are: Soyabean 35%, soyabean oil/soyabean meal 32%, maize 20% and wheat 23%. There are quotas for maize and wheat exports. The Argentine government subsidises mills to control flour prices to keep bread prices low, as are bottle oil prices. Soyabean imports are banned and are not even permitted from Mercosur countries. Biodiesel has an export tax of 15%. There are import limits on equipment, fertilisers, oil and limits to beef exports as these have previously distorted the home beef market making beef too expensive for Argentine consumption.
- Cargill Soya grown in Argentina is 100% GM, using Roundup Ready Monsanto beans, so that the ground is sprayed for weeds and the soya survives. The yield benefit is around 10 – 15% because water is not wasted on weeds. Follow on crops also benefit from the lack of weeds. Land rental is stated as the equivalent of 1.6 tonnes of soya per hectare, which currently equates to approximately \$450/ha. Farmers are able to double crop i.e grow both soya and wheat in one year.
- Land prices are \$18,000/ha in the Pampas, but land is not for sale here. Poorer land in flood prone areas would sell for \$3000/ha.

## **Tuesday 22nd November**

The group travelled from Buenos Aires to Parana, Entre Rios and saw Grupo Motta Hy-Line parent farms with open sides.

Dinner was kindly hosted by Hector JB Motta the General manager of Grupo Motta since 1971 at the Yacht Club

## Wednesday 23rd November

Visit to Grupo Motta the official distributor of Hy-Line International in Argentina. The Grupo Motta company produces Hy-Line day old chicks and has an integrated broiler business called CALISA.

### Grupo Motta Hatchery

#### Key Points:

- The hatchery is divided into 2 separate parts, one side producing Hy-Line day old pullets and the other side producing broiler chicks. The hatchery is situated in a small town that originally housed 20 families and has now grown to 300 families all employed by Grupo Motta
- The hatchery was built 22 years ago and has 28 ChickMaster incubators hatching more than 3 million Hy-Line Brown and W36 chicks per month. The day old chicks are transported all over Argentina as far as 1200km to the north and 1800km to Patagonia in the south in climate controlled lorries. The journey can take 22 hours and chicks are provided with dry feed in the chick boxes.
- The broiler side of the hatchery is part of the CALISA business, hatching 1.3 broiler chicks (50% Cobb and 50% Ross) per month. The broilers are for the Argentine market and sold as fresh portions and cooked products.
- The layer chicks are vaccinated at the hatchery with HVT+IBD (Marek's disease and Infectious Bursal Disease) and Rispens (Marek's disease) vaccines, coccidia and Infectious Bronchitis (IB) vaccines. Male chicks are macerated and sold as organic waste
- The broiler chicks receive HVT+IBD and IB vaccines. 15% of Argentina's 580 million broilers are vaccinated *in ovo* along with Gentamycin or Excenel antibiotics rotated on a 3 month basis to avoid the build up of resistance to these antibiotics. Other broilers will receive HVT+IBD or HVT+ILT, Bursaplex IBD vaccines, Fowl Pox vaccines

### Grupo Motta Feller Feed Mill

#### Key Points

- Meal for breeder layer diets and pelleted diets for broilers are produced.
- 5000 tonnes of feed/month is produced averaging 5700 tonnes per month.
- 6 rations are produced during the summer and 5-7 rations during the winter
- Diets include: maize, full fat whole soyabeans extracted soyabean meal and premixes of vitamins and minerals.
- Quality and consistency of extracted soya is an ongoing concern. To overcome this problem the company is investing in their own soya processing plant that will produce both extruded full fat soya and also soya expeller. The oil produced from the expeller will also be used with any surplus sold off. The ultimate goal would be to use any surplus oil for biodiesel production.
- 80% of wheat is bought in, 20% grown by the company
- The diets are formulated by the company veterinarian.
- As a rule of thumb the price per kg of feed is based on the cost of 2.2lb soyabeans using the Chicago price
- Broiler diets are therefore currently US\$ 270 per tonne Layer diets are US\$ 234 per tonne
- Bacitracin is used in breeder diets at 50 ppm

## **Grupo Motta CALISA Complejo Alimentario S.A chicken processing plant**

### Key points

- 40,000 whole birds (2.8kg liveweight at 47 days) are processed per day (some exports to South Africa)
- 2 days a week spent hens are processed in the same factory ( birds are bought at US\$0.60 from a contractor)

## **Grupo Motta ASADO cooked chicken processing plant**

### Key points

- The cooking plant was built in 2005. Chicken meat is cut, cooked and covered in bread crumbs to produce products for mostly external markets and a little for the Argentine market
- Products such as precooked chicken steak covered in bread crumbs, chicken breasts steamed then roasted, BBQ chicken wings and fillets, diced frozen chicken are produced.
- All products are steam cooked at 90°C then individually frozen in a spiral chiller at -20°C.
- Products are exported to 24 countries on 4 continents including EU, Africa and South America
- 45 people are employed at the plant.

## **The Grupo Motta Business**

An excellent overview of the Grupo Motta business was given by Hector JB Motta the General Manager, his children Dr. Augusto Motta, Strategic Planning Director, CALISA Processing Plant General Manager and Dra. Helen Motta Cabana Avicola Fellier Manager and nephew Cr.Juan Pablo Motta.

### Key points

- Grupo Motta will be 50 years old in January 2012 and they have produced day old layers for 54 years.
- In 1999 the company CALISA was started to process spent hens from all over Argentina and to export the by-products originally 80 tonnes per month and now 500 tonnes per month.
- CALISA was expanded to include an integrated broiler business as multipliers of genetics, with slaughter and processing plants originally dealing with 156 broilers per month and now 1.5 million broilers per month.
- CALISA exports chicken meat to 24 countries under BRC, HACCP and Halal regulations
- Grupo Motta has 3 feed mills producing 10,000 tonnes of feed per month
- In 2010 Grupo Motta launched a new venture called “COBISE” a high biosecurity egg production complex. Hector Motta sees COBISE business as “high biosecurity for the future”
- Grupo Motta will invest US\$15 -18 million in this project in 5 years. Investment for COBISE has come from 50% low rate Government loan and 50% from Entre Rios banks
- A 400 hectare farm was built in naturally isolated cleared native scrubland, access roads built, drainage placed in flood prone areas (for a fish business), all infrastructure such as electricity cables and a backup generator built and asphalt floors laid for the poultry houses. Local wood was used for building the 2 pullet rearing houses and 5 laying houses. A soyabean excrusion and feed mill, 10 houses for workers were erected along with separate road systems for clean and dirty products.
- Hector Motta commented on Argentina’s strengths in being able to produce huge amounts of

food, milk, chicken meat, eggs and pork meat to feed the world. At present animal welfare is not top priority in Argentina, but he sees that this will change over the next 5 years and with EU customers they will have to fulfil EU welfare requirements.

### **Technovo S.A – egg processing business**

We enjoyed an excellent visit to Technovo SA and was greeted by C.P.N Hector Eberle Director General and Lic. Pable Asensio Quality and R&D Manager

#### **Key points**

- Technovo S.A. was started in 1995 with 1 production line processing liquid egg and 1 production line processing egg powder, this was increased in 1998 to 2 lines and second liquid egg drier.
- In 1998 Technovo started exporting to the EU and now export to 27 countries. Customers include Nestle, Craft and Unilever.
- In 2004 following a domestic internal economic crisis, Tecnovo supplied only into the Argentine market and added a third drier to the plant
- In 2010 the plant is currently running at 80-90% of maximum capacity due to the global economic crises affecting the export markets. 50% of the plant's capacity is produced for export. The plant produces liquid egg and whole egg powder, powdered yolk and powdered egg whites.
- Eggs enter the plant within 48 hours of being laid, the eggs are all white eggs from Crespo city and are unloaded by hand. The eggs are washed before going into the breaker and the liquid egg is pasteurised.
- Pasteurised dried egg whites are produced by removing the glucose content by the addition of enzymes or by fermentation. Both of these products undergo pasteurisation of the powder in hot rooms. The removal of the glucose helps to maintain the white colour of the powder.
- Every batch of egg powder under goes QC testing for physical properties and for bacterial (including Salmonella), yeast and mould content.
- 5 tonnes of yolk powder and 4 tonnes of whole egg powder are produced per day.
- In Argentina shell eggs are sold in supermarkets by weight of a pack rather than by individual egg sizes and have a shelf life of 30 days.
- No clears from broiler or layer hatching eggs are permitted for breaking under Tecnovo rules.

### **Pullet rearing Unit**

The group visited a pullet rearing unit, supplied with brown and white chicks from Gruppo Motta

#### **Key points:**

- The cage unit had 3 houses, with 30,000 pullets per house. Each house had both brown and white layer pullets. The unit houses between 2.8 – 3 crops of birds per year and operates on an all in, all out basis.
- The layer industry is not integrated. Grupo Motta sells day old Hy-line Chicks to pullet rearers who sell to egg producers, similar to the UK.
- A day old pullet costs US\$0.80 (52p) and to 13 weeks a profit of US\$0.50 is made per pullet. A 13 week pullet costs US\$4
- Vaccinations - Laying pullets are vaccinated with HVT+IBD and IB (Mass) at the hatchery. On farm pullets receive a live Mycoplasma Synoviae (Ms) vaccine at 14 days (which is very early if maternally derived antibodies to Ms are present), 2 x live IB+ Newcastle (ND) La Soto vaccinations, 2 x live Coryza vaccination all by eyedrop which is an excellent and very effective way of vaccinating pullets, but highly labour intensive. Inactivated IB+ND+ Egg Drop Syndrome (EDS) and an inactivated Salmonella Gallinarium (not SE or ST vaccines as in the UK) vaccine into the muscle and Fowl Pox by wing web stab. The pullets are handled regularly during rear for vaccinations and are severely beak trimmed at 5 weeks of age.

- The Brown Hy-Line bird in Argentina is more susceptible to Salmonella infections than the White Hy-Line bird and so only the Brown pullets are vaccinated against Salmonella Gallinarum. This genetic resistance has been reported previously.
- The feed consisted mostly of maize, soya, calcium carbonate and premix. Layer diets contain 2/3 marine shell and 1/3 calcium carbonate which is more expensive due to transport costs.
- Larvadex fly control is used during lay as well physical methods of careful disposal of manure.
- 100% of white layers are moulted at 60 weeks of lay, taken to 100 or 140 weeks and undergo a second moult. 50% of brown layers are moulted once at 50 weeks. Moulting is induced by feed deprivation (an illegal practice in the UK) resulting in up to 20% mortality. The birds are then brought back onto lay by practising skip a day feeding.
- Labour costs 1000US\$ per month and 5 people are employed on the unit to look after 90,000 birds. Extra labour is brought on to the unit for vaccinations and beak trimming.

### **Broiler Unit**

The group visited a delightful broiler unit owned by Horaio Gracilla and run by husband and wife family team who made us feel very welcome.

### **Key Points:**

- The broiler unit is part of an integrated business of 48 farms. The broiler company provides the day old chicks, feed, litter (rice husks), propane heating, vaccines and antibiotics, places the chicks and removes the broilers at the end of the crop. The producer provides the buildings, electricity, water and labour. The producer is paid on average weight, FCR and viability of the broilers.
- The chicken meat is for the Argentine market and for export to 24 countries.
- 50% Cobb and 50% Ross birds are grown to a live weight of between 2.75 – 2.8Kg in 47 days with an FCR of 1.98 (higher than the UK of 1.6). Average mortality is between 3.4 and 3.5%
- The birds we saw were all sexed, 50% Cobb and 50% Ross. The producer thought that the Ross bird was easier to grow, but that the Cobb bird put on fat easier and were a more “delicate” bird to grow
- The birds were housed at 12 birds per square metre with 80,000 birds on 7000 square metres.
- The newly erected houses will take 7 years to pay off and consist of open sided houses with curtains, propane heaters and automatic water fogging to keep the birds cool in the summer.
- The broilers are housed on dirt floors with rice husks for litter at 1kg per bird. Rice husks are very absorbent and protect the bird from breast blisters. The litter is removed at the end of every flock and sold as compost and this pays for the cleaning and disinfection of the house. A long turnaround time of 15 – 20 days is enjoyed.
- Vaccinations of HVT+IBD and IB are given at the hatchery. ND (NG/GA strain) vaccines by spray at 11-12 days and IB (H120) at 14 days of age. Coccidial vaccines are sometimes given in the summer, but in feed anticoccidials are given rotating Salinomycin, Lasalocid and Monensin on the 3-4 month rotation to prevent resistance.
- Water comes from an underground river and undergoes bacterial testing
- Tunnel ventilation is used at a rate of 3m per second and humidity is a problem in the summer months when temperatures can rise to 38 – 40°C
- Feed is removed 4 hours before catching and water is never removed. Birds are carefully caught at night and placed 7 x 3kg birds to a box using the Japanese catching system to avoid damaging the birds

Dinner was kindly sponsored by Hy-Line International

### **Thursday 24th November**

The group travelled from Parana, Entre Rios to Buenos Aires

## Friday 25<sup>th</sup> November

### Visit to Ovobrand feed mill, layer unit, egg processing factory

The group travelled to Brandsen in the province of Buenos Aires to visit Ovobrand a company that produces powdered egg products for export.

Vice President and Veterinarian Gustavo von Bassenheim made us feel very welcome and treated us to an excellent tour, showing us how bespoke egg products are made for different export markets.

#### Key points:

- Ovobrand is the number one egg producer and processor in Argentina supplying countries such as Germany, Sweden, Denmark, Austria, Russia, Japan, the Netherlands and Portugal with powdered egg products
- To maintain excellent biosecurity and to meet the standards set by its overseas customers Ovobrand has its own feed mill, pullet rearing units, laying units and egg processing factory
- The company is isolated to maintain strict biosecurity and visitors are rarely allowed, with 6.5km private roads and shower in, shower out facilities on all units and factory.
- Soya, wheat and maize is grown on 1300 hectares owned by Ovobrand, but other feed is bought in. Lorries are thoroughly washed before disinfecting and raw materials tested before delivery into the feed mill. Testing for Salmonella, protein, fat and campylobacter and mycotoxins takes place before acceptance of deliveries.
- Raw materials are bought in with 21% VAT which can be claimed back as the egg products will be exported. However, the money is received 12 – 18 months after the initial purchase and with inflation the claim will be worth 30% less and is viewed as a type of tax. There is a 5% export tax on egg powder.
- Water is from underground sources and water is found in between different rock layers at 3m,25m,60m and 120m deep. The water quality is tested every 3 months.
- Ovobrand has its own electricity backup generators, there are no solar energy plants, Ovobrand is considering having an Anaerobic Digester plant.

#### Feedmill

- Gustavo von Bassenheim a veterinarian formulates all the diet produced. The mill produced 900 tonnes of feed per week, with a capacity to mill 36 tonnes per hour to produce meal (no pelleted diets) in a 4 tonne mixer.
- Diets contain a combination of full fat soya, soya expeller and extracted soya plus sunflower oil, wheat, soya oil. Local oystershell is also used and is cheaper than limestone but the shell contains some rock particles that dilute the calcium content.
- No egg shells are recycled into layer diets at present, but equipment to process the egg shells from the egg processing business is planned, for re-feeding to poultry.
- Pre-mixes are also added to the diets containing – mono calcium phosphate as 23% phosphate, L-lysine manufactured in the USA, DL-methionine manufactured in Belgium, Choline Chloride and Sodium Carbonate, with high levels of 0.5% propionic acid added as a Salmonella control in the diet.
- Different diets are fed to the layers depending upon what colour yolk is required for which market e.g. Germany prefer pale yolks, so the layers are fed mostly a wheat based diet. Japan likes darker coloured yolks and marigold is added to the diet.

#### Pullet rearing units

- There were 2 rearing farms 1000m apart, consisting of one house of 140,000 Hy-Line W36 birds. Each house is divided in 2 separate compartments as there are 2 separate chick deliveries on different days

to fill the house from Gruppo Motta. Such a division enables accurate temperature regulation for the very young chicks. The chicks are housed in cages over 6 floors and all chicks are vaccinated as one flock. The heating is via gas burners and tunnel ventilation ensure sufficient airflow

- Each rearing farm has a manager that lives on site, it is a shower in, shower out facility and visitors are strictly controlled. Expansion plans are to have 3 farms.
- Vaccination programme: ( as requested by egg powder customers)

Day 1	Marek's HVT+Rispen
Day 4	Vitamin K (to help with blood clotting)
Day 7	Beak trimming
Day 12	IBD
Day 16	ND+IB
Day 22	IBD
5 weeks	ND+IB
6 weeks	Coryza + SE
8 weeks	Pox+ILT+EA
12 weeks	ND+IB
14 weeks	Blood samples to check for antibody titres
	Coryza+ND+IB+EDS+SE
15 weeks	ND+IB

- Ovobrand has its own vaccination team and maintenance team to service the farms.
- No antibiotics are used prophylactically and no anticoccidials are used as all birds are in cages Argentina is officially Avian Influenza and Newcastle Disease free. Salmonella testing occurs at 12 and 15 weeks as assurance for the egg powder customers.
- The W36 birds are currently moulted once and as the farms expand, Ovobrand will stop all moults.
- Poultry manure is spread on the agricultural land and any dead birds are buried
- All the spent hens go to CALISA processing plant and Ovobrand is paid US\$0.40 (26p) per bird similar to UK rates
- Turn-a-round takes 4.5 – 5 weeks. The units are dry cleaned using a vacuum cleaner first, then washed and disinfected

### **Layer Units**

- There are 10 cage units and we saw 5 more under construction. Each house has 135,000 – 137,000 birds, housed at 380 birds per square metre on 4 tiers.
- The birds are fed by chain feeders.
- Each house has its own water and energy supply. All units are shower in, shower out.
- Ovobrand is considering Barn production to meet demands for powdered egg in Germany.

### **Egg Processing Plant**

- Within 12 hours of being laid, eggs are automatically washed in alkaline sanitizer, candled and rejects removed by hand and enter the enclosed breaker where yolks and albumen are separated. A camera takes pictures of the cups to ensure no yolk contamination. 162 eggs per hour are broken.
- There are 3 lines: whole egg and yolk which are pasteurised as liquid and albumen which has the glucose removed by a fermentation process, dried and then the powder is pasteurised in hot rooms.
- Different egg products are manufactured for different markets. We visited Ovobrand's laboratory and looked at 3 different textures of powdered albumen which varied from flour to icing sugar or cornflour in feel. We also looked at the texture of reconstituted albumen and at

whipped albumen perfect for making meringues. The different powdered products under go quality tests as required by the country importing the product.

- Of all the eggs produced and processed by Ovobrand 85% are sold as dry powders and 15% as liquid egg.

We were treated by Ovobrand to an excellent lunch of beef and salad followed by a desert of two different crème brulees to taste. We were asked to vote on which crème brulee we preferred. One was made with whole egg powder and one with just albumen powder. The albumen powder won on taste and texture demonstrating how Ovobrand have really studied and perfected the art of producing what the customer wants.

The group travelled to Tigre, Buenos Aires for a beautiful Delta Tour

Our last evening's dinner was sponsored by Moba BV

## **Saturday 26<sup>th</sup> November**

### **Supermarkets**

#### **Carrefour Xtra – Buenos Aires**

- All eggs were refrigerated, with a sell by and use by date on the packaging
- 6 x 54g white eggs cost 4.99pesos (83p)
- 6 x 62g white eggs “grade 1 S “ cost 6.59 pesos (£1.10)
- 6 x 62g brown eggs cost 7.35 pesos (£1.22)

#### **Carrefour Xtra – Parana**

- 6x 54g brown or white eggs cost 3.95 pesos (66p) (the white eggs had dirty shells)
- 12 boxes of eggs were checked and had no hairline cracks and customers were observed buying boxes of eggs without checking them

#### **Coto - Buenos Aires**

- 30 x white eggs a day past their sell by date, but with 9 days before their use by date were on special offer for 2.10 pesos. (34p)

The group flew from Buenos Aires to London Heathrow.

## Conclusions

- Argentina is a vast country covering 2.8 million Km<sup>2</sup> with a population of 40.1 million, of which 12.8 million people live in Buenos Aires the 13<sup>th</sup> largest city in the world and have an average income per capita higher than the UK average.
- Argentina has the 22<sup>nd</sup> largest economy in the world and their economy is growing at an average of 7.1% over 2002-2010, although businesses have the potential to be hampered by annual inflation of 25% and high export taxes (soya 35%, wheat 23%, maize 20%).
- Argentina has the potential to be one of the world's major food producers due to acres of agricultural land with underground water reserves and the rotation of soya and wheat avoid the need for fertilisers. Argentina currently produces enough food to feed 430 million people, with agricultural exports accounting for over 50% of the country's income.
- The poultry meat industry has grown exponentially in the last seven years by 117% to produce 573 million boilers per year and in 2010 exported 430 000 tonnes of chicken meat aided by a 0% export tax.
- The national laying flock has more than doubled in less than a decade to 35 million birds. Argentina is 100% self-sufficient in poultry meat and eggs, with a consumption of 210 eggs per capita and exports 60,000 tonnes of egg products aided by a low 5% export tax.
- Soya, wheat and maize are grown alongside the poultry units, enabling cheaper feed costs when compared with the UK
- Argentina is officially classified as free of Avian Influenza and Newcastle disease, which aids poultry exports. The vast size of the country enables many new poultry enterprises to be built in isolated areas providing excellent levels of biosecurity to satisfy overseas customers.
- Animal welfare standard and legislation is much less than in the UK and is not so important to the majority of Argentine consumers even though buying choices are not influenced by household incomes. Welfare standards will change as businesses fulfil export contracts from areas of the world where bird welfare is an important issue.
- The businesses we visited were impressive on size, scale and attention to detail. Innovative techniques were used to produce bespoke poultry products for customers across the globe. They had a strong desire to meet and surpass the demands of their customers as consumer trends change and evolve.