



Case study

Laying firm foundations: humane and large scale production of chickens and eggs in Brazil

Korin's laying hens enjoy greater space than caged birds

There are more chickens than any other farm animal in the world today. Nearly 52 billion were slaughtered globally in 2009;¹ most are farmed industrially. The rapid spread of intensive industrial systems is having increased negative impact in a variety of areas including animal welfare and the environment. But it doesn't have to be this way. This case study shows how a Brazilian company's commercial model of chicken and egg production is highly productive, provides potential for good animal welfare, addresses environmental issues and benefits farmers and consumers.

Global context

In most countries meat chickens or broilers are usually produced in conventional industrial systems, crowded together in barren sheds. Here, birds selected for high growth rates reach a slaughter weight of 2.5 kg in just 39-41 days –

less than half the time a normal bird would take to reach the same slaughter weight.

Technological advancements in breeding have resulted in ever-increasing growth rates which, coupled with high density, severely compromise the health and welfare of billions of meat chickens. Rapid weight gain exceeds their body's ability to grow strong enough bones, and leads to skeletal disorders and painful lameness. Such discomfort and pain means the birds spend much of their time lying down on the litter resulting in foot pad, hock and breast sores. Often, their hearts and lungs cannot cope, leading to sudden death syndrome.²

The consequences of industrial poultry meat production are not limited to animal welfare. It is also under scrutiny for the widespread use of antibiotics to manage disease in such crowded conditions. Unless the meat is produced for export to areas such as the European Union, which restrict dietary additives and/or the use of animal protein in feed, birds may be given antibiotics and other growth promoters that can enter the human food chain³. They may also consume feed of animal origins which can increase the risk of disease spreading to animals and occasionally humans⁴.

Resistance to antibiotics is an increasing public health problem worldwide and the widespread use of antibiotics in industrial chicken production could exacerbate the problem.⁵

Recent research from the national sanitary control agency (ANVISA) of Brazil found chicken on supermarket shelves contaminated with high incidences of *Enterococcus* and low incidences of *Salmonella*; it reported resistance of these two bacteria to several antibiotics used in human medicine.⁶

Humane and sustainable business benefits

Korin, a Brazilian company based in Ipeúna, São Paulo State with strong social and environmental values, produces chicken meat and eggs to a successful and growing business model. Korin's products were the first to achieve an animal welfare certification in Brazil and since its founding in 1994 it has pioneered antibiotic and chemical-free poultry production in the country. All of its feed is plant-based. An important part of Korin's work is research and promotion of its production model.

While most conventional poultry production is primarily oriented to achieve ever-increasingly rapid productivity, the model practised by Korin achieves its production targets while raising the health and welfare of the animal in the equation.

Its products are sold in 1,400 Brazilian outlets including Wal-Mart and Pão de Açúcar.

Korin's approach has made a **positive difference** to:

Economy, jobs and livelihoods. More than 250 people are employed at Korin's Ipeúna hub which includes egg production; a research centre; a slaughterhouse; a packing house for organic vegetables; a feed mill; a dry and storage facility for maize; production of vegetables and organic fertilizer and administration offices.

Korin works with 26 local contract farmers who earn more per bird than they would through conventional farming systems. Maize and soya for feed is sourced from over 100 local farmers and ensures they have a secure contract at the beginning of the season.

Environment. Manure from the laying hens and meat chickens is used as a fertilizer in crop production. Korin also works with maize and soya farmers to reduce the use of chemical fertilizers and replace them with organic fertilizer to lower the environmental burden of fertilizer use and improve soil fertility.

The security of the Korin contracts means the maize and soya farmers can re-invest in their farms and employ techniques that lower the environmental impact of feed production.

The organic ranges of meat chicken and eggs use chemical and pesticide-free organic feed.

Public health. Korin meat and eggs are produced without antibiotic growth promoters or other chemical treatments in the feed. The slaughterhouse and packing house is approved and inspected by the Federal Inspection Service, under the Federal Ministry of Agriculture, Livestock and Food Supply. Its disease control plans aim to ensure safe, high quality meat with complete traceability at all stages of production.

Land use. The Korin model puts the health and welfare of the animal at the centre of its activities, while still achieving strong productivity.

The company links its feed and animal production, sourcing an increasing amount of maize and soya from local farmers. It also works with them to disseminate best practices.

Animal welfare. Korin produces natural, organic and free range chicken meat. Natural chickens have more space available than in conventional industrial production; organic and free range have outdoor access. Free range birds benefit from slower growth rates, which results in better overall animal welfare.⁷

Eggs are produced in two cage-free systems: barn (indoor) and organic. All laying hens can perch and nest and organic laying hens have outdoor access. As for broilers, contract farms are no further than a 1.5 hours drive from the slaughterhouse which reduces the stress animals experience during transport.



Safety first: Korin meat has complete traceability

Demanding humane and sustainable farming

Chicken meat is Korin's rapidly growing main business, stimulated by the growing domestic Brazilian demand for humanely-produced chicken meat. In 1995 it produced 260,000 kg on its site in Ipeúna; in 2011 Korin's production is expected to reach 8.6-9.3 thousand tonnes.

Consumer and retailer research confirms there is a growing demand for products with higher welfare, and willingness to pay a premium. This is especially the case among the growing middle class and in large cities like São Paulo, where consumers are less sensitive to price and more interested in quality attributes, including animal welfare.^{8,9}

"The continuous demand experienced, since Korin came into operation in the 90's, strongly shows that Brazilians are increasingly concerned with the animal welfare and environmental impacts of the food they eat," says Reginaldo Moriwaka, Korin General Manager.

In Brazil there are no regulations on space allowance for meat chickens and most conventional farms keep birds at 35 kg of live weight (approximately 15 birds) per sq meter.¹⁰ Korin birds have a more generous space allowance of a maximum of 26 kg of live weight (approximately 11 birds) per sq metre and grow

more slowly taking 46 days to reach slaughter weight. While these birds are still a fast growing strain, this production system results in fewer incidences of lameness, less competition for food and more space to behave naturally.



"It is not reasonable to carry on producing animals that need sub-therapeutic use of medication just to remain productive. Animal welfare will become increasingly important as more restrictions are placed to the use of antibiotics and other growth promoters and the result will be healthier consumers and healthier animals."

Luiz Carlos Demattê, Industrial Manager, Korin

In 2011 the company launched a new line of free-range chickens known as 'caipira' in Brazil. These birds can access the outdoors and benefit from much slower growth rates. Slaughter weight is reached in 86 days. They are produced at a high welfare farm run by the Food Animal Initiative (FAI), whose research is sponsored by the World Society for the Protection of Animals (WSPA). The farm aims to be a centre of excellence for research and the dissemination of humane husbandry and handling to farmers, the industry, government and the public.

Korin complies with a range of certification standards that provide assurance to consumers and aim to ensure good animal welfare. Korin is certified by ECOCERT Brazil as 'Certified Humane'¹¹ since 2009. Its organic range is certified by the Brazilian Institute of Biodinamics.

Creating producer prosperity

The Korin system requires more labour as birds need to be monitored more closely, but is very attractive to local farmers who receive a higher price per bird compared to that received in conventional broiler production.

The Korin model aims to support the longer term development of their supply chain. Producers never receive less than the average payment from the previous six flocks, which protects them against fluctuations in productivity due to extreme or unforeseen events. Producers also receive a premium of up to four pence per bird if they comply with specified conditions including the quality of facilities

and demonstrable staff knowledge of the system. An advantageous credit line is available to farmers who wish to upgrade their facilities. Korin provides training to producers before they engage in production.

Grain producers benefit from a contract with an agreed price at the beginning of the growing season. They can opt to receive the payment in one instalment when they deliver the grain, or receive a premium payment if they opt to receive the payment in several instalments throughout the year.

Linking crop and animal production

In industrial livestock production, animals and feed are often produced in different geographical areas. This can lead to a surplus of nutrients in the land area where the animals are farmed and a deficit of nutrients in the area where feed is produced. Intensive feed production can lead to land degradation, water pollution and biodiversity losses and expansion of arable land into natural ecosystems has serious ecological impacts.¹² An important environmental feature of Korin's poultry business is their concern with the direct and indirect impacts of production, including the production of feed.

Korin contracts allow maize and soya farmers to re-invest in their farm and in new techniques that simultaneously lower the environmental impact of feed production and improve soil structure and productivity.

Reducing chemical fertilizers

The company also encourages the reduced use of chemical fertilizers and partial replacement with organic fertilizer. Results from 2010 trials, comparing production figures from chemical fertilizer use with those using combinations of organic and chemical fertilizers, gave encouraging results. A similar amount of maize was produced in the trials which involved reducing chemical fertilizers by 50 per cent and substituting with organic fertilizer instead. Korin is now working to promote this more widely.

Local grain farmers have been integrated into Korin's business through investment in a dry storage facility for maize and work with a local company to process the soya beans. Before these investments, that now allow the company to process 1,500 tonnes of grain a month, grains were sourced from the open market.

Enabling business growth

Egg production started at 600,000 eggs in 1994 and is now at 8.5 million eggs a year. Most Brazilian egg production involves the keeping of laying hens in cages for their entire productive lives. The space allowance in a cage is typically around 400 sq cm per hen (the equivalent to the size of letter-writing paper).

Caged housing for birds with poor bone strength can lead to a high incidence of fractures when birds are removed from the cages, and the inability to perform the most basic natural behaviours such as nesting, perching, foraging and dust bathing, shown scientifically to be important to hen welfare.¹³

World Society for the Protection of Animals

Korin eggs are produced by ISA Brown hens that live in aviaries. The birds produce between 300 and 320 eggs per year. They are kept on a single tier of deep wood chip litter and each aviary holds 4,000 to 5,000 laying hens. At five to six birds per square metre, these laying hens have four to five times more space than those kept in cages.

Hens in Korin's organic flocks have a generous outdoor run with trees providing shade and protection. They have space to perch, with 15 cm of perches per animal, and can lay their eggs in nests, with one nest box per five hens provided.

The animals have more space to perform natural behaviours such as perching or dust bathing and receive natural light. They are productive until they are 20-24 months old when they are slaughtered for meat. This egg production system also makes good business sense because it allows chickens to remain productive for a longer period of time compared to conventional caged flocks using the same breed. Production peaks at around nine months, but does not decline so rapidly as in conventional flocks.



Korin's productive organic flocks have generous outdoor space

Forging good relationships

Continuous improvements in management and in Korin's relationship with suppliers also have a real impact in the efficiency of the model and the welfare of the laying hens.

For example, one supplier used to beak-trim all laying hens to avoid outbreaks of injurious pecking. However, with the design and management practiced by Korin, this procedure is no longer routinely used. The relationship developed with the supplier resulted in the phase out of beak trimming of laying hens supplied to Korin. There have as yet been no outbreaks of injurious pecking in the new flocks.



Printed on 100% recycled paper

WSPA wishes to thank Luiz Carlos Demattê and Reginaldo Morikawa at Korin Agropecuária Ltda for all the information provided.

Conclusions

- Humane and sustainable production of chicken and eggs can bring major benefits for businesses, farmers, local economies, the environment and the consumer, as well as animals.
- The success of Korin's business indicates that a growing number of consumers are demanding chicken meat and eggs that have been produced more humanely than those in conventional industrial systems.
- Chicken meat and eggs can be profitably produced with high animal welfare standards and without the use of antibiotics and other growth promoters.
- Well designed contracts and a higher price per bird contribute to the prosperity of the producers and allow for continuous improvements in productivity and animal welfare.
- Contracts with feed producers allows them to re-invest in the farm and partnership working to reduce chemical fertilizer use.

- 1 <http://faostat.fao.org/> accessed 27 October 2011
- 2 European Food Safety Authority (2010), *Scientific Opinion on the influence of genetic parameters on the welfare and the resistance to stress of commercial broilers*, EFSA Panel on Animal Health and Welfare, EFSA Journal 2010; 8 (7):1666, Parma, Italy
- 3 World Health Organization (2001), *WHO Global Strategy for Containment of Antimicrobial Resistance*, WHO/CDS/CSR/DRS/2001.2, World Health Organization, Department of Communicable Disease Surveillance and Response
- 4 Regulation (EC) No 1069/2009 of the European Parliament and of the Council of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation)
- 5 Moreira, M.A.S. and Moraes, C.A. (2002), *Resistance to antibiotics in Gram-negative bacteria isolated from broiler carcasses*, Arquivo Brasileiro de Medicina Veterinária e Zootecnia, v. 54, n. 1, Feb. 2002, Available at http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-09352002000100001&lng=en&nrm=iso, accessed 9 November 2011
- 6 Agência Nacional de Vigilância Sanitária ANVISA (2008), *Monitoramento da prevalência e do perfil de suscetibilidade aos antimicrobianos em enterococos e salmonelas isolados de carcaças de frango congeladas comercializadas no Brasil*, Programa Nacional de Monitoramento da Prevalência e da Resistência Bacteriana em Frango – PREBAF, Janeiro 2008
- 7 European Food Safety Authority (2010) *op cited*
- 8 Farina, T. and Almeida S. (2003), *Consumer Perception on Alternative Poultry*, *International Food and Agribusiness Management Review*, Volume 5, Issue 2
- 9 Ribeiro, A. R. et al (2003), *Carne Orgânica: Panorama Atual, Perspectivas e a Opinião dos distribuidores e consumidores de São Paulo*, IV Congresso Internacional de Economia e Gestão de Redes Agroalimentares, 29 A 31 de Outubro de 2003, FEA USP – Campus Ribeirão Preto
- 10 Van Horne P.L.M. and Achterbosch T. (2007), *Animal welfare in poultry production systems: impact of European Union standards on world trade in Proceedings of the International Poultry Conference*, held 5-7 November 2007, Bangkok, Thailand. Edited by O. Thieme and D. Pilling. FAO Animal Production and Health Proceedings, No. 9, Rome
- 11 *Certified Humane* is a certification programme originated in the US by the Humane Farm Animal Care created to improve the lives of farm animals by setting rigorous standards, conducting annual inspections, and certifying their humane treatment. ECOCERT Brazil acts as the certifying body in Brazil.
- 12 Food and Agriculture Organization (2009), *The State of Food and Agriculture: Livestock in the balance*, FAO, Rome
- 13 European Food Safety Authority (2004), *The welfare aspects of various systems of keeping laying hens*, The EFSA Journal (2005) 197, 1-23