

Poultry News

LOHMANN TIERZUCHT

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Portrait of the Iranian Company Toyoor Barekat A story of success in Iran



Location of Toyoor Barekat's Head Office in the northern part of Tehran.

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LOHMANN TIERZUCHT's partner in Iran, "Toyoor Barekat Co." with its head office in Tehran, is reputed to be one of the largest poultry complexes in the country and considered a very fast growing company in the layer sector in Iran.

It is midsummer in Iran and we are driving from the capital city of Tehran towards north. The car's thermometer shows an outside temperature of 38°C and we are on our way to visit Toyoor Barekat's grandparent stock farm. Recently in this area, lots of birds had to be culled as a consequence of outbreaks of different poultry diseases, which has always been a big challenge for the Iranian poultry industry.

The Toyoor Barekat grandparent stock farm is believed to be the only one in this region which was not affected. The combination of outstanding, paradigmatic biosecurity as well as preventive measures and the

LOHMANN ...Editorial

Dear readers,

in this Poultry News issue, I have the honour of introducing myself as new Managing Director responsible for Sales, Marketing and Finance at LOHMANN TIERZUCHT – side by side with Prof. Dr. Rudolf Preisinger.



Born and grown up on a farm in Eastern Frisia, a region in Northern Germany, I completed an agricultural training and graduated in agricultural engineering.

My professional career started as a breeding inspector in cattle farming, continued as an employee of a Dutch export company, as Sales Manager of an agricultural cooperative and further on as Managing Director of GGI German Genetics.

During the following eight years, I worked as Sales Manager with focus on the European market for an American company in the industrial sector. Before joining LOHMANN TIERZUCHT, my latest position was Managing Director of Genus (ABS and PIC) in the field of cattle and pig farming.

I am very proud to be part of the motivated and highly qualified team of LOHMANN TIERZUCHT now. In these turbulent times marked by great challenges, I assure you of my full commitment to continue to steer a successful course.

Sincerely yours
Hinrich Leerhoff

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excellent management done by specialists at Barekat, spared the company's farm from being contaminated with pathogenic germs. Owing to all of these, the company is still able to continue to keep the precious LOHMANN LSL-LITE grandparent flocks with their top performance.

More than five decades of experience and success

With more than half a century of experience in the broiler and layer sectors of the poultry business, Toyoor Barekat is the exclusive partner and distributor of LOHMANN TIERZUCHT in Iran. The company was privatized 8 years ago by Safari Brothers, the producer of parent stock and commercial layer day-old chicks, pullets as well as table eggs. The company owns more than 10 subsidiaries in the layer sector alone. The different production sites which include 2 hatcheries, rearing and production farms, egg packing and grad-



Toyoor Barekat's grandparent stock farm with sanitary, shower and egg storage rooms and

ing stations, are spread out in various regions of the country. Due to the high density of poultry farms in the central part of Iran and as a preventive measure, the company decided to move some parent stock flocks to a new location in the northern part of the country, close to the Caspian

Sea, where just few poultry farms exist in the area. Barekat also produces its own high quality feed in its own feed mills with a capacity of about 250 tons per day for their grandparent and parent stock farms.

Exemplary Biosecurity and Top Management Methods

Niels Fischer (LOHMANN TIERZUCHT) and Dr. Abbasi (Production Manager at Toyoor Barekat) checking the quality of the newly-arrived grandparent day-old-chicks at Tehran Airport



Toyoor Barekat sets very high standards on hygiene, biosecurity and management. Just to name one example, the grandparent stock farm located in the Qazvin area in Iran, is almost 7 km away from the main highway. A private road leads to the double-fenced farm compound. All the workers and visitors must take a shower and wear the farm's own protective clothing just to get inside the main building as the first station on the compound. To access the grandparent stock house, which is located 1 km away from the main building, you have to take two more showers and change the protective clothing 3 times. Every station has its own protective clothes, shoes and towels with specific colors so as not to be mixed up with the others. The workers and visitors will be driven from the main building to the birds' house using the farm's own vehicle, which never leaves the compound. In fact, no other car is allowed to get inside the com-



the second office building in front

pound with the exception of vehicles from the feed mill and for the transport of birds, which must be washed and completely disinfected in a special car wash, installed at the entrance. These vehicles are just allowed to enter the compound as far as to the main building. The onward transport will be carried out by the farm's own vehicle. The feed delivered by the Toyoor Barekat's own feed mill which is located on the compound, is packed in double bags and will be fumigated on the farm again. All other foreign objects such as glasses or cameras brought by visitors must also be fumigated twice with Formaldehyde. All the biosecurity measures on this farm are an example of the top management arrangements done by Toyoor Barekat's specialists such as Mr. Khatibi (General Manager), Dr. Abbasi (Production Manager) and their colleagues.

Top performance results

Despite extreme weather conditions and a high risk of poultry infectious diseases, Toyoor Barekat has shown how to achieve an outstanding performance with LOHMANN LSL. They were able to attain top performances for several weeks consecutively, even higher than the LOHMANN TIERZUCHT standards in laying, number of settable eggs and saleable chicks per hen housed in the grandparent stocks of both lines. This excellent achievement affirms the high genetic potential capacity of LOHMANN breeds even under hot climate conditions, despite an intensive vaccination program.

Plans for the future

LOHMANN TIERZUCHT and Toyoor Barekat began their cooperation almost 8 years ago. The reputation of LOHMANN products has always been known in Iran for many years now and with all the efforts being done by Toyoor Barekat, this breed is getting more popular day by day. Barekat has improved its market share in Iran from about 30% to 40% during the last 2 years and the latter is very optimistic to enhance this improvement in supplying the Iranian market and the neighboring countries with day-old commercial layer chickens. Exclusively for the grandparent stock farm, a brand new feed mill has just started its operation and a new hatchery is in the pipeline for next year. This means that LOHMANN TIERZUCHT and Toyoor Barekat Co. will continue their partnership and story of success in Iran in the future too.

Iran Facts and Figures

Population: 75 million
Capital city: Tehran
Area: 1,648,195 km²

Poultry Market

Per capita consumption:
160 eggs and 24 kg chicken meat
Almost 100 % white egg market

Development of the Poultry Business

Annual Production today:

- 1.67 million tons of chicken meat (6th in the world)
- 775 thousand tons of table eggs (14th in the world)
- In about 16,000 broiler and 2,000 layer farms

Intensive development in the early 1960s and ranked above thirty amongst the other main global producers.

In 1970s, the Iranian Poultry industry experienced a very rapid growth owing to the utilization of modern technologies and facilities such as automatic cages, feeders and drinkers.

During the last decades, the broiler grower farm capacity has increased to 1,000 million broilers per year comparing to 160 million broilers before. This means an annual growth rate of 17.5 %.

The layer farm capacity increased to 65 million layers per period as compared to the previous 13 million pieces, a 16.6 % growth in volume per year.

Subsidiaries Toyoor Barekat Co.



Founded: 1960

Capacity Today:
4000 grandparent stock (D-Line)
270,000 parent stock
5,000,000 rearing Pullets
3,000,000 commercial layers



Key factors for successful hatching egg handling

Hatching eggs: Taking care of temperature and hygiene

To preserve hatchability from egg deposition till setting is the aim with hatching eggs. Temperature and hygiene are the two key parameters for a successful hatching egg handling.

A hatching egg is not like any other egg. A hatching egg contains the complete genetic potential, which has been achieved by LOHMANN TIERZUCHT during decades of continuous breeding work. This potential is embedded in a little embryo on the egg yolk. When managing hatching eggs, the aim is to retain the quality of the hatching eggs from the moment of egg deposition till setting in such a way, that the embryo has optimum developing conditions and that after 21 days vital chicks can hatch.

The quality of the freshly laid hatching eggs is among others influenced by the following factors:

- Health status and uniformity of parent stock
- Feed quality
- Water quality
- Management system
- House climate
- Number and quality of males

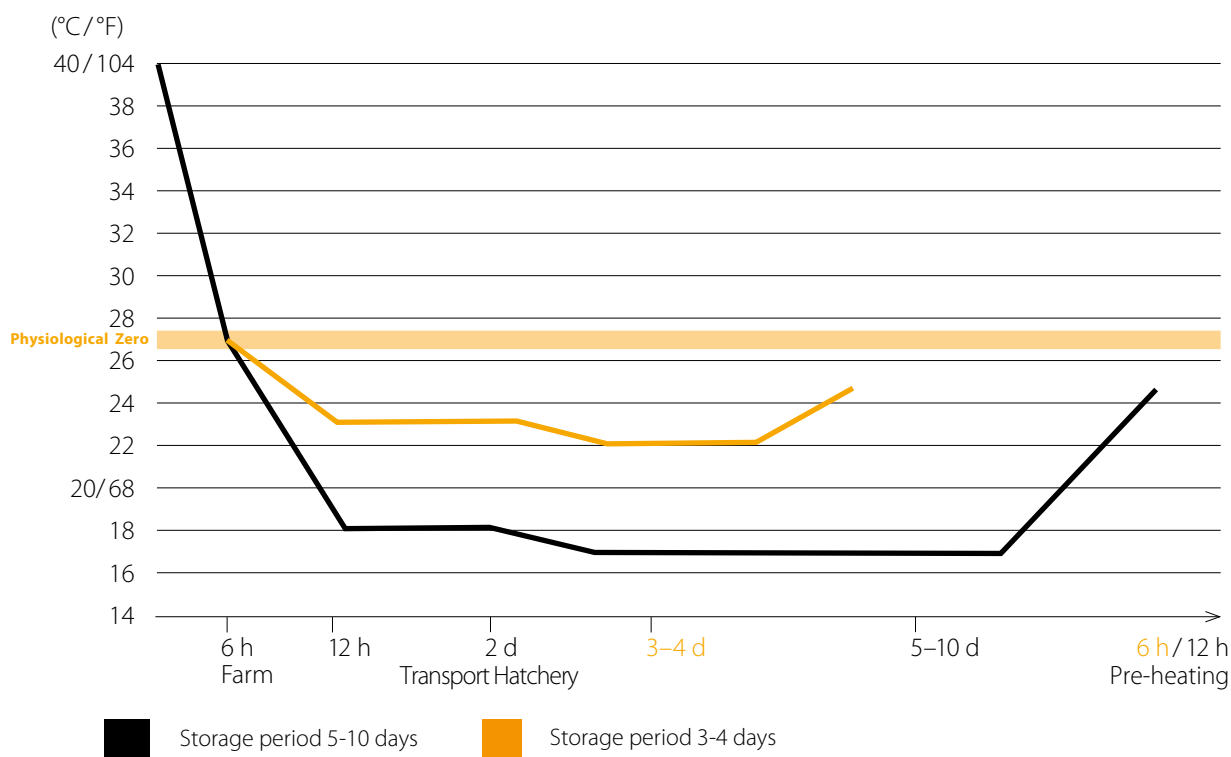
These factors influence the shell quality, the egg size, the nutrients and the maternal antibodies in the hatching egg. Further-

more, they define the fertilisation rate and the germ load of the laid eggs.

After egg deposition, a successful management of the hatching eggs maintains the hatchability of the eggs till setting. For this, the important factors are:

- Type and cleanliness of the nests
- House temperature
- Frequency and care of egg collecting and transport
- Egg storage temperature
- Disinfection of egg shells.

III. 1: Optimum development of egg temperature from egg deposition till setting depending on storage period



These criteria can be reduced to two key parameters: hygiene and temperature. Why are these two parameters so important?

Clean nests indispensable for hygiene of hatching eggs

Naturally, a hatching egg is relatively well protected against the penetration of bacteria as long as egg shell and cuticle are intact. If these barriers are damaged, for example caused by careless handling of the hatching eggs, badly adjusted conveyor belts etc., bacteria can easily penetrate the egg. This can lead to embryo mortality and to an overall reduced quality of the chicks due to contaminated eggs (so called bangers).

Shortly after egg deposition is a particular critical moment, the egg shell is moist and the cuticle is not yet an effective protection. In addition, during this period the egg is cooling down from the hen's body temperature (41°C) to house temperature. Due to this process of cooling down, the content of the egg contracts and a vacuum is created in the egg. In compensation, air enters and forms the air cell. Together with this air, bacteria can easily penetrate the egg. For this reason, it is very important that only hatching eggs are used which have been laid in a clean nest.

Caution with floor eggs

Floor eggs or system eggs are most probably already contaminated before they can be collected, disinfected or washed if necessary. Thus, they should not be set in the incubator. Also on clean hatching eggs an inevitable number of bacteria can be found. In order to reduce them, the eggs should be disinfected very quickly after collecting. In the past, fumigation with formaldehyde was often used as the standard procedure. Besides the undisputable ef-

fectiveness of this fumigant, it also has several disadvantages. These include embryo damage, particularly if the dosage or the temperature is too high or if the fumigation time is too long. Furthermore, formaldehyde is classified as potentially carcinogenic (cancer-causing). Nowadays, a lot of less harmful chemicals are available, which are at least as effective as formaldehyde

for disinfecting egg shells. In many hatcheries fogging of the disinfectant with a very small droplet size has become the prevalent process. It ensures a good contact of the agents to the egg surface without making it really wet. The Technical Service of LOHMANN TIERZUCHT is at disposal for information on products, which have been proven to work.

III. 2: Fogging of disinfectant for bacteria reduction on the egg shell





III. 3: Candling with hand lamp

Aiming at an adapted egg storage temperature

Temperature is the crucial parameter for storing eggs. Here, the principle applies that the longer the hatching eggs have to be stored the lower the optimum temperature. What is the reason for that?

After egg deposition, first the embryonic development has to be interrupted. This requires cooling down the egg within six hours below 26-27°C. Normally, this happens in the nest or on the egg belt. If during summer the outside temperature is high, the eggs cannot cool down sufficiently in the house. Under those conditions, the hatching eggs should be collected more frequently and transferred to a cooled store. This avoids exposing the embryos for too long a time to a temperature of 27-37°C. Temperatures within this range cause an imbalanced development of the embryo and thus, lead to a higher rate of early embryonic mortality (III. 4).

After the cell division has been stopped due to the cooling down of the eggs below the physiological zero, the hatching eggs must slowly be cooled down to an even lower temperature. Thus, the quality of the albumen is stabilized, the water loss is reduced and the mortality of embryonic

cells is minimised.

If the eggs are stored only three to four days, they must not be cooled down below 20°C. A relatively high storing temperature fosters the dilution of the albumen and thus, the gas exchange during the first days of incubation. However, in most layer hatcheries hatching eggs are stored up to ten days. In this case, a temperature of 16-18°C is recommended (III. 1).

Even temperature for all eggs

It is important that the targeted storage

temperature is preferably achieved for all eggs and that it stays nearly constant. Large variations should be avoided, because they can also contribute to a higher rate of early embryonic mortality. For this reason, special attention should be paid to good insulation and sufficient cooling capacity of the egg rooms in order to compensate for daily variations in the outside temperature. For temperature control the regular use of temperature loggers is recommended. They can be placed in the egg room or they can be used during egg transport from the parent stock farm to the hatchery.

III. 4: Two opened candled eggs: unfertilized (left) and early died embryo (right)



Partnership and Quality the factors of Success

LOHMANN FRANCE - a success story

In September 2011, the French subsidiary of LOHMANN TIERZUCHT, LOHMANN FRANCE, celebrated its 10th anniversary.



During the international agricultural show SPACE in Rennes, Managing Director Joël Audefray and his team welcomed French and foreign partners of the poultry industry in celebration of the 10th anniversary at the brand new booth. Especially for this anniversary, it was designed in the colours black and orange.

Moreover, on September 15th, Joël Audefray and the team of LOHMANN FRANCE received more than 250 guests at the castle of Apigné, near Rennes, the capital of Brittany, where SPACE takes place every year. After having provided a brief historical overview of the company, Joël Audefray presented the characteristics and development of the franchise hatch-

ery in Saint Fulgent. Since its purchase in 2003, the hatchery's capacity doubled until 2007 and was further expanded in 2011. The success of LOHMANN FRANCE results from partnerships with the best breeders and distributors, combined with an outstanding product quality.

Film giving insight into work

During the celebrations, live music from a jazz band provided good entertainment and the guests were served with delicacies and cocktails. A short company film gave some insights into the working life of the team of 33 and the various stages of poultry production (14 million chicks per year) at LOHMANN FRANCE.

Another highlight was the keynote speaker Professor Dr. Rudolf Preisinger, Managing Director and Chief Geneticist at LOHMANN TIERZUCHT, who fascinated the audience with his speech on the „Genomics in the selection of laying hens“.

The successful event was completed by a tombola. The host Joël Audefray thanked all participants for their loyalty to LOHMANN products and assured them that also the future development will be adjusted in the best possible way to the customers demands.

Austria – an interesting egg market

„KAT - AMA Austria“

Austria is a particular location for egg producers and marketers. Since decades, the Alpine republic is an important market for LOHMANN TIERZUCHT, too. The German breeding company has successful franchise hatcheries on site: Schropfer GmbH and Geflügel GmbH.

Austria has a population of about 8.4 mil. people, of which 1.7 million live in the capital Vienna - considered as the gateway to the East. In contrast to the development in Germany, the Austrian population has continuously grown during the last ten years. Also concerning the annual per capita consumption of eggs, the Austrians are with 240 eggs clearly above the EU average. However, the degree of self-sufficiency on eggs is decreasing and has meanwhile fallen below 70 percent. According to the official layer statistics, in March 2010, about 5 million layers were in production in Austria. 66 percent were kept in barn systems (mostly aviary systems), 20 percent in free range husbandry, 9 percent in organic egg production and transitionally a neglecting number still in small group systems.

Since 1st of January 2009, according to the national animal husbandry regulation a complete ban on cages is in place. Egg producers, marketers and labelling organisations such as “animal welfare tested”, “KAT Austria” and “AMA-Fresh-Egg” label, have agreed on this.

Supplier since decades

LOHMANN TIERZUCHT is supplying its breeding products to Austria since decades. On site, the company is represented by the long-term franchise hatchery Schropfer

GmbH in Schottwien-Aue. And since seven years, also the Geflügel GmbH in Schlierbach (Upper Austria) is annually supplied with three LOHMANN BROWN parent flocks from Cuxhaven.

Austria has proven that with the right choice of pedigree and good flock management husbandry in cages can be abandoned. Despite management mainly in barn or aviary systems, LOHMANN hens are behaving calmly and non-aggressive – even without beak trimming. This awareness is now getting around also in other EU member countries and has lead to discussions in different countries about a national ban on beak trimming.

One should admit that Austria has a peculiarity with regard to layer nutrition: Due to existing national calcium and phosphorus sources providing a remarkably high content of magnesium, this mineral with a sedative (calming) effect finds its way into the feed mixtures. That might be one of the major reasons why in Austria egg production in alternative systems is so successful even without beak trimming.

Franchise hatchery with top equipment

For more than 30 years, the Schropfer family is franchising LOHMANN breeding



products at their beautiful headquarter in Aue. After decades of keeping LOHMANN BROWN (now CLASSIC and EXTRA) and LSL parent stocks in group cage systems, the conversion to aviary systems of parent stock in rear as well as in production was carried out until the end of 2009. In the past years, two contract farmers for hatching egg supply were added, so that today annually 80.000 parent chicks are housed. Thus, the major part of the Austrian demand for layer chicks can be covered as well as a partial demand of the neighbour countries such as Hungary, Slovenia and



Croatia. In 2010, the modern hatchery has once more been expanded and can now produce nearly 9 million female chicks per year. Schropfer also coordinates a considerable part of the pullet production. The company is ISO certified, operates according to high quality standards and ensures impeccable hygiene. For exports, transport vehicles with a capacity of up to 100,000 chicks are available. Due to the favourable geographic location, the export share is continuously growing.

Leading role in organic eggs

After several years of effort, in 2004 LOHMANN TIERZUCHT and the responsibilities of Geflügel GmbH in Schlierbach have agreed to cooperate in the fields of parent stock supply and customer service. Today, Manfred Söllradl heads the Geflügel GmbH as Managing Director and main shareholder. Over the years, the company's strong involvement in organic egg production and marketing in Austria has paid off. It has be-

come the basis for keeping parent stock at co-shareholders and a few years ago, for the own investment in a new built hatchery. Meanwhile, nearly 1.4 million layer chicks are hatched per year. Also in this case, LOHMANN BROWN products (CLASSIC and EXTRA) are highly appreciated due to their calm behaviour, the good nest acceptance, the outstanding shell quality and the high performance even under organic Management and diet conditions.



49th LOHMANN TIERZUCHT Franchise Distributor Meeting

Focus on shell stability and animal welfare

From 27th to 28th of September 2011, LOHMANN TIERZUCHT had invited its franchise hatcheries and distributors to the 49th Franchise Distributor Meeting in Bremen. High-level speakers from Germany and abroad promised an interesting event. This time, the following topics were on focus: shell stability and animal welfare.

In his welcome speech, Dr. Hans-Friedrich Finck emphasized the continuous increase in sales of LOHMANN TIERZUCHT and revealed some development prospects of genetics. He highlighted, for example, the selection regarding improved vitality of the birds, the development of niche products and the selection regarding nest acceptance. Furthermore, he informed about the visual changes in LOHMANN TIERZUCHT's external communication.

Focus on egg shell

First speaker was Prof. Sally Solomon of the University of Glasgow with the lecture entitled: "The egg shell: suited for its purpose?" In her vivid presentation, the well-known poultry researcher examined the egg shell from the hatching egg as well as the table egg perspective with a special focus on shell structure. Finally, her conclusion was: "Fit for purpose".

Dr. Wiebke Icken and Dr. Matthias Schmutz of LOHMANN TIERZUCHT commonly lectured on the selection regarding shell stability and thus, directly followed Prof. Solomon's subject. They elaborated on different methods of measuring shell stability and the comparison of testing devices for breaking strength as well as the breaking strength of eggs depending on the hens' age. The specialists of LOHMANN TIERZUCHT stated that for measuring shell stability the so-called Crack Detector is the best method in order to ensure a continuous genetic improvement of the shell stability.

Dr. Frederik Ranck of Ranck Veterinary Practice completed the first event day with his lecture on "Egg shell defects of commercial layers caused by *Mycoplasma synoviae*". He explained that *Mycoplasma synoviae* have a great influence on shell quality and laying performance. Moreover, *Mycoplasma synoviae* also affect the egg quality with regard to shell colour, consistency of albumen, size of air space, yolk colour as well as shell stability.





Focus on animal husbandry and welfare

The second event day concentrated on animal husbandry and welfare. Arnold Elson of ADAS Gleadthorpe (UK) started with a lecture on the past, present and future of laying hen farming. The future of laying hen husbandry should aim at the following:

- further development of enriched cages
- optimization of aviary and free range systems
- dissemination of animal-friendly systems also outside Europe
- secure protection system for laying hens, e.g. protecting against birds of prey

The lecture of Prof. Dr. Rudolf Preisinger was entitled: „Relevant Animal Welfare Aspects in layer breeding“. He talked about daily challenges as well as animal welfare aspects, basic research regarding sexing, beak trimming, single cage management for exact efficiency testing and animal identification – and put all this up for discussion. According to Preisinger, bad management could

affect animal welfare in any system, whereas in alternative systems good management is particularly required and expensive.

The event was completed with the presentation of Dr. Klaus Damme (from the expert centre for poultry in Kitzingen). In his presentation about the use of male layer hybrids for meat production, he explained the difficulty in feeding a male layer hybrid in such a way that he becomes fat enough to be saleable as a broiler male. This measure for avoiding the forced death of day-old male chicks of layer hybrids was not only problematic with regard to the considerably longer fattening period, but also with regard to the automation of the slaughtering process. The setup for the special integration of small broilers including a new build slaughterhouse and a specialised marketing would be required, Damme concluded.

Both Preisinger and Damme stated clearly that when it comes to evaluating alternatives to the forced death of male layer hybrids, the focus must not be put on economic and commercial interests. A lively discussion with controversial opinions finalized the series of lectures. The opposing points of view were on the one hand the hunger in developing countries and on the other hand the forced death of male day-old chicks for whose fattening much more corn would have to be grown.

In the evening of the first event day, the participants could relax in the pleasant Hudson Eventloft which offered an ideal ambience for mutual exchange and further discussions among the experts.

The 50th Franchise Distributor Meeting will take place from 25th to 27th of September 2012 in Berlin.



Competition enforces efforts on German market

Highly competitive market near border area

Since the borders in Europe have fallen, it is tempting for producers in border areas to expand their activities to neighbouring countries. This development has also not spared the layer market. Sales representatives of competitors are courting egg producers and try to conquer the German market.

The franchise hatchery Gudendorf-Ankum located in Ankum in the northwest of Germany has communicated this observation. Thus, the editor of Poultry News went on-site to get a clear picture of the situation. Together with Thomas Uhlenkamp, sales representative of the Gudendorf-Ankum poultry breeding farm, they visited egg producers in the German-Dutch border area.

First stop was the farm of Edzard Schmidt who has a flock of 18,000 LOHMANN BROWN for organic egg production near Aurich. Organic egg production means a maximum stocking density of 3,000 hens per group and additionally, four square meters of green run per hen. Also on the green run, the birds of each group must not mix and have to stay clearly separated.

The characteristic of this management system is that already the rearing has to be carried out completely biological. Any-

thing synthetic is not allowed. During the laying period the hens have light from 5 a.m. to 7 p.m., thus a total of 14 hours. The LOHMANN BROWN-CLASSIC laying hen is perfectly suited for this management system.

Great commitment of sales representative

The young farmer Edzard Schmidt is caring intensively for his layers. In 2008 he has housed his first flock (12,000 hens) and in the meantime, increased to 18,000 hens. Asked why he has housed a LOHMANN BROWN-CLASSIC flock for the third time, he replied: "The support of the sales representative from Gudendorf-Ankum plays a key role in my success." Due to its excellent persistency, the flock could be housed longer than the 75th week of life. And the egg weight is higher than that of the standard LOHMANN BROWN.

LOHMANN TIERZUCHT hens are well-known for laying eggs with a uniform colour and a solid egg shell – characteristics which are of great importance to many egg producers. Schmidt is selling the eggs to a marketer.

Showing great commitment, the sales representative of the franchise hatchery has supported the development of the organic farm from the beginning and prepared, with his profound calculations of profitability, the meeting with the bank. If the product is all right and the customer convinced, soon a friendly partnership is established. Thus, it is much more difficult for competitors to enter the market, even if a well-trained staff is inviting for coffee and cake. It is much easier to court an already operating producer without doing all the grassroots work.



Immense satisfaction with franchise distributor

Another operation houses 40,000 LOHMANN BROWN-CLASSIC in a free-range system. Since 27 years, he always buys hens only from LOHMANN TIERZUCHT. This immediately suggested the question „Why?“ The reliability of the layers with regard to persistency, shell colour, laying performance and breaking strength of the shell are well-known factors. But what else explains this long-term confidence? The producer's answer was: "If I need something, Gudendorf-Ankum is providing it! They have the corresponding size to flexibly react to my needs."

Thomas Uhlenkamp and the editor of Poultry News made their last stop at the company of Antonius Schulte-Südthoff in Engden. There, a flock of 40,000 LOHMANN LSL-CLASSIC hens is managed in a free-range system. Also this farm has a contract with a marketer called Heidegold who is taking all his goods.

The currently producing flock displays a very high laying peak and a good persistency. Once again, this flock will show a result considerably above the standard performance. The egg weight fulfils the market requirements of free-range eggs. Schulte-Südthoff explains that he still has space for additional houses and based on his good experiences with his first flock, is thinking about expan-

sion. Thomas Uhlenkamp informed him about the different possibilities and as a supplement recommended organic egg production or another free-range system.

Aggressive approach of competition

Apparently, competitors have a completely different marketing strategy. They aggressively approach the market and recommend barn systems on a large-scale. A type of complete package is offered, however, the egg numbers are often not achieved and the producers are clearly left standing.

People and strategies are very different and thus, the one or other producer has already been fooled by the competition's promises. Indeed, these producers have very quickly faced the harsh reality.

Partner with many advantages

Besides the known qualities of LOHMANN TIERZUCHT layers, some of the so-called soft skills of the sales staff are playing a key role. But also the size of the franchise distributor and his flexibility play a major part in the economic success of the producers, e.g. due to consulting regarding the management system and the choice of high-quality feed or due to support during the planning phase. This can only be achieved by people who have gained the producers confidence, who are living near by and are available quasi at any time.

Due to their tireless efforts, the sales representatives from Gudendorf-Ankum have acquired the producers trust and are exemplary for many of their colleagues also from other German franchise hatcheries who successfully sell LOHMANN TIERZUCHT layers.





Highest egg mass and best shell quality

LOHMANN BROWN-CLASSIC convinces once more with results of performance testing at Ustrasice

In the recently published performance test results in Ustrasice (Czech Republic), LOHMANN BROWN-CLASSIC has once again demonstrated its exceptional position in egg mass production and shell quality. It is the only breed which has achieved the top position in both categories at the same time.

The outstanding shell stability combined with the smooth dark shell colour ensures commercial success in egg production. Less cracked eggs mean more saleable eggs and thus, more satisfied customers. This also facilitates a longer production cycle resulting in more eggs per layer and

year and concurrently, lesser periods in which the nests stay empty.

Only those producing quality will assure their economic success in the long-term. Without sufficient shell stability, L- and XL-sized eggs are not marketable.

14th International Random Sample Test (RST) in the Czech Republic (18th to 74th weeks of age*)

Breed	Egg number per H.H.	Egg weight g	Egg mass per H.H. kg	Breaking Strength N	Cracked eggs	Shell colour	IOFC €
LOHMANN BROWN CLASSIC	345	62,1	21,4	43	2,4	14	20,85
B	343	60,9	20,9	37	3,5	14	20,30
C	337	60,9	20,5	39	2,8	19	19,93
D	347	61,2	21,2	36	3,3	15	20,65
E	344	60,7	20,8	38	4,0	20	20,26
F	350	60,4	21,1	35	4,3	21	20,53
G	344	61,2	21,0	37	3,4	21	20,45

* *Cage management IOFC = 1.00 x egg mass – 0.25 x feed consumption*



Software programs support data analysis

First compress, then analyse

Monitoring the nesting behaviour is of high interest for producers as well as for parent stock franchise hatcheries. When it comes to data analysis, the two software programs „Ident Converter“ and „Chicken Checker“ are a valuable assistance.

At the research station Thalhausen of the Technical University of Munich, the nesting behaviour of 600 LOHMANN TIERZUCHT layers is recorded everyday. For this reason, each layer is tagged with a transponder at the leg. Ten times per second, a reader checks the individual nests which are equipped with an integrated antenna.

When a layer occupies a nest, the transponder number of this specific layer would be logged. If at the time of inquiry the nest is empty, a „zero“ is recorded. Everyday at the research station Thalhausen, huge data sets with sizes of up to 350 MB are generated for the 72 nests in this way. The data is stored on mainframes and has to be compressed for further analysis of the nesting behaviour for each single layer. These tasks are carried out with the aid of two especially developed software programs.

Controlling logical sequences

In the first step, the data is processed with the software „Ident Converter“ (IDC). It controls the raw data regarding logical sequences in order to correct possible mistakes. For example, it checks whether different transponder numbers have been logged in a very short period of time in the same nest. This is of major importance, as it is necessary to make sure that only one single layer occupies the nest at a particular



Compressed data set after processing with „IDC“ and „Chicken Checker“

ID	Date	Egg Index	Transponder ID	Place/ Nest	Begin	End/Exit
38	25.07.2011	0	8000F58289B2DABA	Ne14	08:55:24	09:39:59
39	25.07.2011	0	8000F58289B2DF83	Ne14	09:45:06	09:53:03
40	25.07.2011	0	8000F58289B2DF83	Ne14	10:12:55	10:13:15
41	25.07.2011	1	8000F58289B27B87	Ne15	07:27:11	07:55:32
42	25.07.2011	0	8000F58289B27B87	Ne15	08:08:22	08:08:22
43	25.07.2011	0	8000F58289B27B87	Ne15	08:16:41	08:16:57
44	25.07.2011	0	8000F58289B272F8	Ne15	08:18:43	09:10:39
45	25.07.2011	0	8000F58289B26A34	Ne15	09:12:23	09:41:55
46	25.07.2011	0	8000F58289B2CC84	Ne15	09:59:27	10:29:46
47	25.07.2011	0	8000F58289B2609A	Ne16	07:28:50	08:37:22
48	25.07.2011	0	8000F58289B27E51	Ne16	08:37:56	09:17:48
49	25.07.2011	0	8000F58289B2E281	Ne16	09:18:47	10:12:41
50	25.07.2011	0	8000F58289B26EA0	Ne17	07:29:29	07:44:27
51	25.07.2011	0	8000F58289B2EAF2	Ne17	08:04:36	08:15:00
52	25.07.2011	0	8000F58289B2EAF2	Ne17	08:24:12	08:27:31
53	25.07.2011	0	0	Ne17	08:27:10	08:27:10

time. It sometimes occurs that two layers occupy one nest at the same time. The IDC recognizes these cases and blocks the data for further evaluation in order to exclude assignment mistakes between the laid egg and the layer. Such eggs cannot be considered for testing the egg quality.

Compressing raw data sets

In the next step, the program „Chicken Checker“ compresses all data exported by the IDC (ten per second per nest). As a result, a data file is obtained which only consists of nest data relevant for analysis, such as the

Raw data set: 10 data per second per nest

```

08:46:58.094 << 1200315A ID 0 8000F58289B2746A 0 8000F58289B27721 0 0000000000000000 0 0000000000000000
08:46:58.094 << 1300315A ID 0 0000000000000000 0 8000F58289B27BF5 0 8000F58289B2E0D0 0 8000F58289B2DA14
08:46:58.094 << 1400315A ID 0 0000000000000000 0 0000000000000000 0 8000F58289B2D004 0 8000F58289B27D48
08:46:58.094 << 1500315A ID 0 8000F58289B25E5C 0 0000000000000000 0 8000F58289B25A6 0 8000F58289B2E7F7
08:46:58.203 << 1600415A ID 0 0000000000000000 0 8000F58289B2CEAF 0 8000F58289B257AB 0 8000F58289B2E246
08:46:58.203 << 1700415A ID 0 8000F58289B2CA2C 0 8000F58289B2E831 0 8000F58289B27E64 0 8000F58289B26DF1
08:46:58.203 << 1800415A ID 0 8000F58289B2561F 0 8000F58289B2D273 0 8000F58289B2DDA1 0 0000000000000000
08:46:58.312 << 9000915A ID 0000000000000000 0000000000000000 0000000000000000 0000000000000000
08:46:58.312 << 9100915A ID 8000F58289B25C64 0000000000000000 0000000000000000 0000000000000000
08:46:58.312 << 9300915A ID 0000000000000000 0000000000000000 0000000000000000 0000000000000000

```

Duration of stay	Egg signal	Oviposition time	Egg Signal	Egg identification	Double Occupation Sensor	Double Occupation	Remark
00:44:35	1	09:08:17	1107250308	100	0	0	
00:07:57	1	09:51:16	1107250309	100	0	0	
00:00:20	0	00:00:00	0	0	0	0	
00:28:21	1	07:43:57	1107250303	99	0	0	
00:00:00	0	00:00:00	0	0	0	0	
00:00:16	0	00:00:00	0	0	0	0	
00:51:56	1	08:45:05	1107250304	100	0	0	
00:29:32	1	09:38:14	1107250305	100	0	0	
00:30:19	1	10:06:04	1107250306	100	0	0	
01:08:32	1	08:20:35	1107250300	100	0	0	
00:39:52	1	09:02:05	1107250301	100	0	0	
00:53:54	1	09:37:18	1107250302	100	0	0	
00:14:58	1	07:43:32	1107250294	100	0	0	
00:10:24	0	00:00:00	0	0	0	0	
00:03:19	0	00:00:00	0	0	0	2	
00:00:00	1	08:27:10	1107250295	0	0	2	8000F58289B2EAF2

starting and ending time of a nest visit, or the exact time of egg oviposition. While compressing data of one single nest visit, which has been recorded several times per second, the “Chicken Checker” monitors the length of time in which a single specific transponder number has been continuously recorded/

captured. Furthermore, with the “Chicken Checker”, additional limits, or rather minimum or maximum values are defined, which in turn have to be entered as flexible parameters for the analysis and control of the data set. Thus, the daily data set of about 350 MB

is reduced by a thousand times. This data set is then used for layer specific analyses regarding nesting behaviour and laying performance in group housing systems and is transmitted to the central database of LOHMANN TIERZUCHT in Cuxhaven.

Quo vadis layer breeding?

In which direction is layer breeding heading in major areas? LOHMANN TIERZUCHT's geneticists Prof. Dr. Rudolf Preisinger and Dr. Wiebke Icken give clear answers to seven current questions.



1. Are there differences in the breeding of layers determined for barn and free range systems?

LOHMANN TIERZUCHT continues to focus its activities on the essential characteristics such as high laying performance, good feed conversion, market compliant egg weight as well as excellent shell and egg quality. However, in these management systems, the behaviour of the hens is of higher importance than in cage systems.

The particular suitability for barn and free range systems comprises of characteristics such as stability of plumage, low tendency for feather pecking and cannibalism, spreading in the house system, good usage of free range and nest acceptance, meaning less floor eggs. Additionally, hens in barn and free range systems have to cope with



greater environmental and stress influences and in case of suboptimal feeding, have to show high metabolic stability.

2. How can the behavioural characteristics mentioned above be monitored in breeding work?

Reliable data obtained from an environment which is similar to practical farming conditions, are an indispensable precondition. This means that the hens monitored must be managed in large groups, but nevertheless the performance and behaviour of each individual hen can be analysed. At LOHMANN TIERZUCHT, performance and behavioural data are recorded with the aid of the so-called Weihestephan Funnel Box based on transponder technology. This enables the automatic and individual recording of nest visits, nest occupation time, oviposi-

tion time and number of eggs. Due to the transponders ensuring the identification of each single laying hen, the period of time spent in the free range can also be logged.

3. Is the heritability of behavioural characteristics high enough for successful breeding?

The characteristics nest acceptance and laying performance are recorded with the Weihestephan Funnel Box in the common selection criterion "Number of saleable nest eggs".

Eggs which are laid on the floor will not be taken into account as being saleable eggs, thus reducing the laying performance. The heritability lies on a mid-range level and thus, can be well treated in breeding. The heritability estimates of free-range usage also lies on the mid-range level. However, it correlates negatively to the laying performance – hens showing a high laying performance spend less time in the free-range area.

4. To which extent does house management influence the hens' behaviour?

Training and management decisively influence nest acceptance. Fostering the hens' activity by means of a corresponding rearing, a timely house change into the production house as well as the design and arrangement of the laying nests are among the most important aspects in order to minimize the number of floor eggs. To a great extent, feather pecking and cannibalism depend on the house management. Here, principal starting points are the choice of lighting, an adapted lighting programme and feeding in line with demand.

5. What are the main differences between white and brown hens, especially in terms of their suitability for alternative management?

The behaviour of white and brown laying hens is considerably different. While the white Leghorn hen seems to be

anxious and hectic, the brown hen is characterized by a calmer and calm behaviour, which sometimes even affects the nest acceptance negatively. Results obtained by the Weihenstephan Funnel Box have shown that compared to the LOHMANN LSL hen, the LOHMANN BROWN hen starts earlier in the day with oviposition. Furthermore, LOHMANN LSL hens spend a much shorter period of time while visiting nests during the day and stay notably longer in the nest per visit.



For management purposes, it can be deduced from these results, a stock of LOHMANN LSL hens having the same size as one of LOHMANN BROWN hens, should be provided with more nest spaces in order to avoid floor eggs. In optimum management, both hens are equally suitable for alternative systems. The decisive factors for choosing the right hen are the national market situation and the consumers' preferences.

6. Can a worldwide operating company such as LOHMANN TIERZUCHT meet the different requirements for laying hens?

Basically, the different selection criteria are integrated in an overall breeding value index. This index evaluates the single criteria with regard to their controllability through breeding as well as their economic and market relevant importance.

LOHMANN TIERZUCHT offers five basic pedigrees of which the single selection criteria are prioritised differently. Let's take for example, a robust, brown-feathered hen with relatively big eggs the LOHMANN TRADITION. Unlike the LOHMANN BROWN hen, she has a lower egg rate and higher feed consumption.

The individual countries of the world focus on different criteria. Japan, a country in which eggs are also eaten raw, has the highest demands where egg quality is concerned. Canada would like to have white

eggs whereas. Spain prefers having brown eggs and eggs which are as big as possible. India is a market for small, white-coloured eggs. Cream-coloured eggs are also very popular in Japan and China, whereas these eggs are not saleable in Europe. Last but not also least, hens have to prove themselves in the most various climatic regions worldwide and under differing management conditions.

7. To what extent have new, genetic-based breeding methods been already integrated in layer breeding?

At the moment, intensive research is being carried out in terms of marker-assisted selection, for example, as part of the project Synbreed, in which LOHMANN TIERZUCHT is also involved. Marker-assisted selection aims at analysing several patches of the genome for small differences, which when combined, can provide an indication of performance respective of important breeding criteria. In the meantime, research

has already identified 600,000 chicken markers. However, a single patch can at the same time have a positive effect on one characteristic and a negative on another. When it comes to performance and quality criteria, the combination of all patches provides the genetic predisposition.

In conducting blood sample analysis, marker-assisted selection will facilitate the selection of males and hens already during rearing. Thus, a first selection without efficiency testing can be carried out earlier and more targeted, which again shortens the generation interval and increases the breeding progress. In addition, selection will become more efficient where vitality and susceptibility to diseases are concerned.

A successful example for the use of genetic analysis in layer breeding is the exclusion of the "genetic defect for fishy egg" tainting brown layer lines." LOHMANN TIERZUCHT owns the European patent for this.



Acknowledged expert leaving for retirement

Farewell to Heiko Tiller

For 35 years, Heiko Tiller has worked for the LOHMANN group. Now, he has left for his well-deserved retirement.

The farewell to Heiko Tiller took place during a poultry symposium in a dignified atmosphere at the Lake Lucerne in Switzerland. Many companions from Germany and other European countries had followed the invitation. Prof. Dr. Rudolf Preisinger and Robert Pottgüter gave the lectures and of course, duly appreciated the merits of Heiko Tiller being the guest of honour.

Heiko Tiller had been working four and a half years as feed specialist for LOHMANN Tierernährung before he started his career on 1st of May 1982 at LOHMANN TIERZUCHT GmbH as Assistant Manager Production. His other tasks included the technical handling of the poultry nutrition department, the consulting of the subsidiaries as well as the sales activities for Germany, Switzerland, Austria, Italy, France,

Great Britain and whole Scandinavia. For these countries, Marek Malkowski, Niels Fischer and Pieter-Jan Luykx were presented as corresponding successors.

Once again LOHMANN TIERZUCHT would like to thank Heiko Tiller for his many years of committed cooperation and wishes him all the best for his new stage of life.



In Poultry News 2/2012 we will report on the following topics:

- **Cover Story:**
Sexing
- **Customer News:**
Clean Eggs Spain, Mexico, USA, LOHMANN DO BRAZIL
- **Technical Publication:**
Rotlauf
- **Events:**
Midwest Show USA (Pottgüter/Mazaheri), Stoneleigh UK

Calendar

Midwest Poultry Federation Convention
14-15 March 2012, Saint Paul, USA
British Pig & Poultry Fair
15-16 May 2012, Stoneleigh, UK
SPACE
11-14 September 2012,
Rennes, France
EuroTier
13-16 November 2012,
Hannover, Germany

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