RESPONSE OF LAYER BREEDING TO TODAY’S MARKETING AND WELFARE DEMANDS
An outbreak of AI is no longer news in the poultry industry!

Several new outbreaks on different continents in flocks of commercial or backyard birds are challenging the entire industry and harming the trade of poultry products.

More than 30 countries worldwide have decided to protect their territories from potential cross contamination by closing their borders to other countries officially “touched” by existing international regulations.

We, as LOHMANN Tierzucht, the world’s largest international supplier of layer parent stocks, have taken on this challenge as our main responsibility.

Thanks to the cooperation of health authorities implied, the unstoppable efforts of our staff in the different positions/locations within Lohmann, as well as the patience and efficient management of our clients/distributors in their own local status, we have, so far, been able to get our genetics to you on time and safely.

We would like to express our special thanks to all of those who made this possible.

Lohmann will continue to serve its customers in response to years of loyalty and make sure that our biosecurity measures, our strategic geographic positions, and internal efforts and dedication, will assure efficient supplies even in the years to come.

Sincerely,

Javier Ramírez Villaescusa

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RESPONSE OF LAYER BREEDING TO TODAY'S MARKETING AND WELFARE DEMANDS

The world population passed the mark of 7 billion last year and continues to increase at a rate of about 80 million people per year; the demand for eggs is increasing at least at the same rate. To meet the increasing demands, a minimum of 50 million hens have to be added each year.

Increased egg production, improved feed efficiency and adaptability of egg quality to consumer preferences have contributed significantly to the success of the poultry industry. While the focus has to remain on maximizing the genetic potential for producing high quality protein at competitive cost, additional requirements of the egg industry, changing consumer habits and the public opinion on animal welfare have to be taken into account.

Close communication

Primary breeders have to look beyond current requirements and anticipate changing needs and opportunities at least five years into the future. Close communication between breeders and distributors is necessary to introduce new varieties at the right time to benefit from growing niche markets. This requires intensive gene pools with large elite lines which can be combined at rate strain crosses with specific attributes to meet market needs as closely as possible. Maintaining and developing new lines, testing, selection and reproduction of primary stocks involves high fixed costs in the operation and requires superior skills in quantitative genetics as well as internal organization to keep track of the availability of different line combinations. Genetic development, marketing and technical support have to communicate closely with local distributors to provide the best possible service for the current market and to benefit from changing requirements.

To supply the best possible combination for each market with specified optimal egg weight, shell colour and the most common strains as well as under floor conditions with a new kind of "trapping" the majority of single bird cages are enriched with perches, nests and scratching areas with the aim of creating a testing system which is as close as possible to future housing systems with more floor space and several enrichments. Daily egg production is recorded with the aid of barcode readers, various egg quality traits (mainly egg weight, shell stability, shell colour and internal egg quality) and plumage condition are recorded on a sample basis across the production cycle. Individual feed intake and daily egg mass are determined at peak production, i.e. during the time of maximum performance, so that selection for improved efficiency reflects the capacity for sufficient feed intake at a time of greatest nutrient demand.

Ten years ago, the automatic testing of individual performance in floor systems was developed with the aid of a specially adapted transponder technique and the Tehesrulstletter Funnel Nest Box to obtain individual information on egg production, nest acceptance and utilization of outdoor facilities (winter garden or free-range). The data are used in family selection for "number of saleable nest". The value of these indexes of production, efficiency and quality parameters.

Breading goals

For the foreseeable future, we can safely assume that general breeding goals such as egg numbers, feed efficiency and egg quality traits will remain priorities. Behaviour patterns and especially behaviour anomalies are included in the selection process for more than 10 years now. Suitability for floor housing and free-range systems has become more important, and this includes attention to a whole range of traits: acceptance of nests and free-range, persistent plumage cover to the end of lay, resistance to common diseases and minimal tendency to develop feather-pecking or cannibalism.

LOHMANN TIERZUCHT has invested in additional testing capacities which reflect typical field conditions in different markets. At the same time, the genetic basis of the elite lines has been expanded on different continents to accommodate the demand of growing markets, which in turn will minimize the rate of inbreeding and the risk of losing valuable genetic variation. A special program to match selected males and females at the pedigree level ensures that inbreeding effects in the pure lines are minimized and genetic progress continues at an even faster rate.

Molecular Biology

Advances in molecular biology have contributed new and more powerful techniques for selection. Using informative genetic markers, we can identify individuals with special characteristics early in life and thereby accelerate improvements in egg production, egg quality, behaviour and livability. These innovations complement traditional performance testing and evaluation methods based on phenotypic selection indexes of production, efficiency and quality parameters.

Additional information based on DNA analysis is combined with traditional breeding to select males at an earlier age and to differentiate among full brothers, which used to be "converted" into reality in commercial practice. Disease control, farm management and nutrition have to keep pace with genetic improvements. Together, we can achieve more and we will stay successful also in the future.

Prof. Dr. R. Preisinger
8TH OMMAT SCHOOL, another story of success by Arab Poultry Breeders Co.

rab poultry breeders Co., "OMMAT", with a market share of more than 75 % is the market leader in supplying the Kingdom of Saudi Arabia, the Gulf countries and Yemen with day-old layer chickens. The company, which was founded in 1990, is the exclusive partner and distributor of LOHMANN TIERZUCHT’s breeds in the region. The latter is reputed to be one of the largest layer-type breeder complexes in the Middle East. Aside from high quality and excellence in the production and distribution of poultry products, “Arab Poultry Breeders Co.” sets a very high value on the training and education in excellent management for both its employees and clients. In this context, a seminar known as the “OMMAT SCHOOL” is held regularly on an annual basis. This year, the 8th OMMAT SCHOOL took place in the Millennium Hotel in Jeddah from 24th to 27th of November 2014. Customers of the company and poultry men from all over Saudi Arabia and other Arabian countries participated in this event. The seminar started with a speech by Mr. Husain Bahin, the founder and Chairman of the company and his son, Mr. Moyassar Bahri, the General Manager of “OMMAT”. The program covered various recent topics in the poultry business such as veterinary issues, latest technology on poultry equipment and housing, egg marketing, flock management and economics. The speakers were chosen from different local and internationally well-known companies all of whom made the “8th OMMAT SCHOOL” very informative. In addition to the lecture program, performing the Umra and a sport program were also provided for participants. The school was closed with a speech by the Director General of Agriculture for the Kingdom of Saudi Arabia, Dr. Fahd bin Abdul Rahman Belghunaim. The participants and lecturers were honored thereafter and photos were taken of the same. On the whole, the 8th OMMAT SCHOOL was another success story which was perfectly organized by Arab poultry breeders in every respect.

Fahhad Miazdar

Participants of the 8th OMMAT School

THE POULTRY INDUSTRY IN SRI LANKA AND NELFARMS

Sri Lanka, formerly called “Ceylon”, has a very special place in the history of poultry domestication with its “Gallus lafayetii” or “Ceylon Jungle fowl” being one of the ancestors for the present day poultry breeds. However, the poultry industry in Sri Lanka only has a brief history as this began just a few decades ago. During the past 2 decades, the presence of native backyard type poultry breeds have been declining with the availability of present hybrid chicks in the rural areas due to the rapid growth of the poultry industry.

About 70 % of the contribution to the livestock sector in Sri Lanka is made up of chicken meat and eggs. With the current purchasing levels of consumers, the industry is capable of producing a considerable amount to meet the local requirements for chicken meat and eggs. These are relatively cheap as compared to other animal products. Poultry products are now the most consumed source for animal protein in the diet of the average Sri Lankan as the industry today is in the hands of the private sector that does not have constraints.

Today, NelFarms is one of the largest producers of ‘day-old chicks’ and the largest, fully-integrated producer of ‘table eggs’ in Sri Lanka. NelFarms is one of the pioneers in catering to the protein requirements of the whole nation by supplying clean, safe and high quality table eggs, island wide. The continuous development of Nel is assured due to its committed management team, skillful workforce and the usage of cutting edge technology.

NEL is a responsible corporate citizen and makes a substantial contribution towards the domestic economy.

Dr. Manoranjan Shri Maruthi

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Dr. Manoranjan Shri Maruthi
South Korea - The Land of the Morning Calm

"The Land of the Morning Calm" or South Korea, officially known as The Republic of Korea, is an East Asian country located at the southern part of the Korean Peninsula bordering North Korea, China and Japan. It is one of the most developed countries in the world and currently the world’s 12th largest economy with more than 80% of its population living in the cities.

As the economic status of the Korean households improved and personal income increased, the intake of meat and eggs also increased steadily. The players in the poultry industry of South Korea, both in broiler and egg production, consist of large integrators and some small independent farmers.

In the past 4 decades, the South Korean egg industry has grown from backyard farming to full scale intensive farming with emphasis on modern technology. The per capita egg consumption for South Korea is about 11.2 kg or 180 eggs per person per year. The Korean consumers are quality conscious, with preference for table eggs produced under good sanitary conditions, high Haugh Units and a dark brown egg shell colour.

LOHMANN TIERZUCHT is a proud partner of Join Co Ltd in South Korea especially since we introduced one of our popular breeds, Lohmann Brown-Lite more than a decade ago. It is popular amongst the South Korean commercial layer farmers for its good performance, high laying rate, good laying persistency and for its other traits like its high Haugh Units.

Join Co Ltd is one of the market leaders in the South Korean poultry industry. It first started in 1979 as Kang Nam Hatchery by Mr. Han Jae-Kwon. By 1985, the company owned a total of 16 farms and did not stop growing in its capacity ever since.

In 1993, Mr. Han converted the traditional farming system within his company into a modern poultry systematization and in 1998, he had already built a modern Egg Distribution Warehouse System. His company is among the first to do so in South Korea.

By 2002, the company was incorporated and in 2004, it was certified with ISO 9001 for its good production practices.

The year 2006 marked another milestone for Join Co Ltd as the company introduced a system called the Grade Egg Information Service. This is a very significant achievement with regard to food safety as their customers can trace and check the information about antibiotic residual status, grade packing centre where the eggs are packed, grade information and the packing date of the eggs that were bought by the customers simply by entering the serial number in the website http://www.apgs.co.kr/etrace/etrace.asp.

This further enhanced their traceability system and increased the customer’s confidence in the quality of the eggs produced in their facilities.

In 2007, a new egg processing plant was established and a year later in 2007, “Nuriwell” a brainchild and a new brand name for Join Co products, was launched by Mr. Han.

Since the launch of “Nuriwell”, Mr. Han has dedicated all his passion and time to further expand his business to the other parts of the world. He has a strong idea and a clear vision to make Join Co into a global company that is proud to introduce Korean food to the world. He is confident in the expansion plans as he has a team of motivated employees that fully support him, and we at LTZ are even prouder to be able to share his success story.

Dr. Ling Ling Chuah

Range of Join Co Ltd Bestseller Products: 01. Ready to Eat Seasoned Hard Boiled Eggs  02. Pasteurized Liquid Eggs 03. Fresh Table Eggs Pack of 15, Donate as you buy campaign  04. Organic Eggs, Pack of 15  05. Fresh Table Eggs, Pack of 30

Front View: New R&D Complex
Dedicated Sales Team in front of the HQ
Egg Shaped Business Complex, Join Co Headquarters in Gyeonggi-Do

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Dr. Kim and Dr. Eun, Veterinarians of Join Co Ltd
Mr. Jung Sales Manager and Mr. Choi

09 Poultry-News
With 22 Million DOCs placed in 2014, the Peruvian lay-

er industry is growing at an even faster rate than the

country’s economy. In former times, egg producers

were competing with the fish industry and only when fish prices

were too high, Peruvians tended to consume more eggs. In 2005,

egg consumption was at only 110 per person. Due to the impres-
sive economic growth in the last decade, driven mainly but not

only, by the mining industry (GDP 5,8% growth in 2013, according

to the World Bank), egg consumption has been increasing steadily

and independent from fish prices.

Peru is a market for middle-sized brown eggs, although late-

er and independent from fish prices. In the past, all layer farms had a very simple structure consis-
ting of open houses built with wooden poles, wire, and in some areas where it never rains, not even a hard roof; they used canvas

and 230,000 in rearing and housed in own farms, also embarqued in

brush and straw. Labour was cheap and available but the booming economy has made it expensive and scarce.

Nowadays, the layer industry is undergoing a rapid modern-

ization process where automation plays a significant role and

LOHMANN TIERZUCHT is supporting this process not only with its

products, but also with recommendations and advice.

Agropecuaria Vallecito introduced Lohmann

Brown to the country in 1993

At that time, 10 egg producers started a company destina-
ted to deliver Lohmann Brown DOCs only to its shareholders. The breeders were housed in very simple barns on floor ma-

nagement and achieved very good results. In order to improve

even those outstanding results, at the end of 1997, the produc-
tion on floor was abandoned and the breeders were housed in cages from day 1 on and production was continued with males and females in separate cages performing artificial inse-

mination. Indeed, all production parameters were improved as observed in the following chart:

Until today, Vallecito has continuously improved its own

results and is selling around 4 Million DOCs every year, only to

third parties.

Most recently, the vaccination team of Vallecito’s hatchery

won the 1st prize for the year 2014. This prize was awarded by
Inviset, the company providing the vaccines and evaluating the

efficiency of the vaccination process at all hatcheries in the

country.

Reproductoras Roma

Of the 10 original shareholders, only five are still owners of Val-

lecito and two of them started their own integration process crea-
ting Reproductoras Roma SAC, to produce the growing amount

of DOCs demanded by their new automatic barns with 100,000-

120,000 layers each. Since 2011, this integration is operating in a se-

parate breeding farm fitted with cages and A.I., hatching LB Classic

DOCs at their brand new hatchery with single stage machines, only

for themselves. We were really astonished when the average pro-

duction results of the last 3 flocks were presented to us, outperfor-

ming those of Vallecito and even our own standards:

until 68 weeks of age, 42.51% hatchability and 134.9 DOCs.

Two shareholders of Vallecito:

Raúl Velt Fernández and Attilio Grinbaldi Mansilla owners of

AVIVEL and DIANO MARINA.

AVIVEL: tradition and innovation in hand

More than 35 years ago, Raúl Velt Fernández started his activi-
ties as egg producer at his small farm Santa Anita in Quilmaná,

Calli, with 1,200 layers and 5 employees. In 1998, his son Raúl Velt

Madurano founded his own company in the same region, Gianjento

Don Antonio SAC and in 2013, both companies merged to create

AVIVEL, which they proudly promote as a Peruvian Family Holding.

Today,.Currently AVIVEL is fully integrated with 1.5 million layers in

production in 4 farms undergoing a rapid automation process, with

an own feed mill, a modern packing station worth US$ 2.5 Million and

400 employees. They also produce cages and share the ownership

together with DIANO MARINA and another partner of ALIOVO.

The egg processing plant will start operating in February 2015.

Avivel is the first company to be granted tax exemptions by the

Government, after the project to improve the production process

through innovation was evaluated by CONCYTEC (National Council

for Science, Technology and Innovation).

AVIVEL is a good example of a forefront egg producing compa-

ny where the second generation in charge is as efficient and passio-
nate as the first one.

DIANO MARINA:

a good example of modern egg production

In 1955, Attilio Grinbaldi Mansilla, the patriarch of the extense

Grinbaldi family and founder of DIANO MARINA, started his egg pro-
ducing business with 1,000 layers. In 1970, he bought the Fundo

Diano Marína in Chincha establishing the company that not only

continued with the expansion of the layer operation, but also since

1992, bets on the development of the agroindustry of this region

and started to produce non-traditional products like fruits and vege-
tables. Nowadays, DIANO MARINA is a huge enterprise co-owner of

Reproductoras Roma and Alikvo, with 600,000 layers in production

and 280,000 in rearing and housed in own farms, also embarqued in

a fast automation process and exporting fresh fruits and vegetables

produced in their 300 hectares at the Chinchía Valley and 700 hectares

at the Nasca Valley.

The management of the different companies is spread among

the several young descendants and in-laws of Attilio who is now en-
joying life and supervising the whole modernized business. A spe-
cial chapter deserves the barbeque and dining room of the main

farm and family house where visitors and friends are entertained

like royalty with excellent dishes of Peruvian cuisine and the best

wines from all over the world.

More Lohmann Integrators

Other integration which follow the same modernization process, are

housing our breeders to produce DOCs for their own farms, but

are not allowed to sell the Lohmann products to the market.

La Calma, the biggest Peruvian egg producer, with 5 million layers

is one of them, breeding Lohmann Brown Lite and a small amount

of US Lite. Recently, the newest Lohmann customer, Prommil SAC in

Arequipa, housed its first Lohmann Brown Lite breeder flock.

Altogether, these customers have helped us to achieve more than

50 % market share in a market that is extremely exigent regard-
ing egg shell colour and feed efficiency and where the spent hen

has an un believable value when finished with more than 2,100

and good feather cover: currently 3.7 US$.

The PERUVIAN MARKET

POPULATION: 30.8 MILLION

EYG CONSUMPTION: 180

LAYERS: 20 MILLION

ALMOST 100 % BROWN

THE PERUVIAN MARKET

POULATION: 30.8 MILLION

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Dr. Luciano Cousinet

20 POUlTRY-NEWS
With about 2.3 million square meters and a population of 32 million inhabitants, Algeria is one of the biggest countries in Africa. About 32 million layers are produced in this country every year. Algeria is therefore one of the most important poultry markets in the region, next to Nigeria and South Africa. Up until some years ago, it was the responsibility of the three governmental farms Oravio, Oravie and Orac to produce day-old layer chicks. After the liberalization of the Algerian market, it became possible for many privately-owned hatcheries to be established which in turn resulted in a largely fragmented market. The majority of the Algerian hatcheries are located in the North of the country where the climate is more moderate thereby providing ideal conditions for animal production.

The head office of El Mazraa Lounis as well as the company’s own feed mill and some commercial layer houses are also settled in this area. The parent stock flocks and the new hatchery are situated in Ain Oussera, a sparsely populated area about 200 km South of Algiers, the capital of the country. In addition to the production of layers and eggs, the company is also active in the business of producing broiler day-old chicks. El Mazraa Lounis was founded by Abdelkader Lounis in 1979. Today, the company is led by his sons, Ali and Khaled Lounis, who split the responsibilities of the operative business into two sectors, i.e. purchasing raw materials and production. El Mazraa Lounis is one of three companies in Algeria who produces and sells LOHMANN day-old chicks.

Business relations between LOHMANN TIERZUCHT and El Mazraa Lounis first began in January 2012 with the first PS shipment of LOHMANN TRADITION birds. Since then, the company has been constantly developing and as a consequence the construction of a second hatchery became necessary. The day-old layer chicks, which are produced by El Mazraa Lounis, perfectly meet the demand of the Algerian market for XL-eggs. With the new hatchery, which is in production since January 2015, the company continues its constant growth. The hatchery is state of the art and contains 18 setters and 9 hatchers manufactured by Petersime.

LOHMANN TIERZUCHT is pleased about the continuing growth of El Mazraa Lounis and truly appreciates the successful collaboration over the years. We wish family Lounis all the best with their new hatchery and a good hatch, always!
PRE-INCUBATION TO IMPROVE THE HATCHABILITY OF STORED EGGS

WHY SHOULD I READ THIS?

THE PROBLEM …

Beyond one week of storage, even under optimal conditions, the hatchability will drop 0.5 - 1.5 % per day with the percentage increasing as storage extends further. After two weeks of storage, the chick quality will also be impaired. LSL is usually more negatively affected by long storage than is Lohmann Brown.

Pre-incubation is one tool to reduce the negative effect of long egg storage. It cannot improve hatchability, but helps to maintain it. Therefore, it starts making sense using this technique, if eggs are scheduled for a storage period which leads to a noticeable decline in hatchability. This depends on the local conditions of the flock and the storage.

Why does Pre-Incubation work?

Learning from mother hen …

A hen needs approximately 24 hours to produce an egg. Around 30 minutes after an egg is laid the next follicle is ovulated. The follicle falls into the infundibulum where the fertilization takes place. After that, the albumen is added, the egg membranes are formed and the egg shell is composed.

Therefore, the eggs arriving at the hatchery are containing an embryo representing already 23.5 hours development in the hen’s body. However, this developmental stage at point of lay is not optimal for long storage. In nature it would be altered by periodical warming of the eggs during the time the hen sits on the nest to produce the next egg of the clutch. In the hatchery it is possible to achieve similar results by incubating the eggs for 3 to 6 hours during the first storage days. This leads to further development of the germinal disk to a stage containing 60,000 - 80,000 cells. At this stage the embryo is less susceptible to cell death occurring during the storage period.

How does Pre-Incubation work?

The procedure …

We aim to apply 3 to 6 hours of incubation during the first days of storage. These hours mean the time the eggs spend on 100 °F/37.8 °C incubation temperature. In order to bring the eggs to this temperature, the eggs need to be heated-up and they also need to cool down afterwards. The different steps of the total pre-incubation procedure are shown by figure 2.

Figure 1: Hatchability of stored LSL eggs under field condition (Japan)

Under conditions causing an improper cooling of the eggs the effect of pre-storage incubation might be negligible or even negative, because the eggs are already containing an embryo at an advanced stage of development.
Review of different day-old chick quality parameters in layer type breeds - Part 2

Quantitative Traits

Activity
Chicks of premium quality must be lively and have a good body tension. This can be checked by placing a day-old chick on its back. A good chick does not struggle to get back directly on his feet. One can say that it should not take more than 3 seconds for the chick to get back in an upright position.

Navel
An essential element in investigating chick quality is examining the quality of the navel. A good navel is closed, dry and free of egg shell and membrane residues. The chick needs to be handled manually to control the quality of its navel. Of course, it is not possible to check every chick in a commercial hatchery prior to delivery.

Investigation of beak and joints
Investigating the conditions of the beak and joints of the chicks can give several hints on incubation conditions. Both must have a normal appearance which means they have to be free of damages and wounds. Wounded beaks and joints are hints of non-optimal conditions in the hatcher.

Investigating Belly Quality
The belly of day old chicks must be soft and smooth. Bloated, stiff and hard bellies are signs of a badly absorbed yolk. This often leads to problems during brooding and results in a higher first week mortality rate. Causes for big and hard bellies in layer type chicks might be due to both insufficient water loss and too high temperatures during the incubation process. A hard belly is also a sign for a yolk sack infection.

Evaluation of Data
The collection of data can be done by means of written forms and/or can be directly entered into a computer program. A good practice is to collect the data based on breeder flock and hatch day. This aids an overview on performance fluctuations related to breeder flocks and/or to hatch day or even season of the year. Of course, data collection only makes sense if one is able and willing to search for the causes for obvious differences in chick quality. Only this can help to improve the production process.

Summary
The aim of every hatchery is to achieve the highest possible number of premium quality chicks. To get an idea on the quality of produced and ready to sell chicks, it makes sense to collect data of chick quality using clearly defined parameters. These parameters can be both quantitative and qualitative traits. Quantitative traits are namely chick weight, chick yield, chick- and feather length. Qualitative traits are more subjective and include the investigation of chick activity and the quality of the navel, beak and joints. There are methods which can help to measure the qualitative traits as objective as possible to achieve a reliable overview about the produced chick quality.

Djanet Ould-Ali
Robert Schulte-Drüggelte
OPTIMAL CALCIUM SUPPLY OF LAYING HENS

H.-H. Thiele (LOHMANN TIERZUCHT GmbH), G. Díaz (Biomix S.A.) and L. Armel Ramirez (Pronavicola S.A.)

During their lifetime, modern laying hens produce a lot of eggs, hopefully “well packed” for handling as hatching eggs or shell eggs for human consumption. Only eggs harvested “well packed” from the nests (or cages) will add to farm income and meet the demands of hatcheries, processing plants, egg traders and consumers, whereas eggs with insufficient shell quality seldom recover the production cost and may be a complete loss.

Selection for improved shell stability is an integral part of continuing efforts to enable modern laying hens to produce more eggs with good shell quality over a longer period of time. Egg producers and feed manufacturers should enable the birds to express their genetic potential, providing an adequate nutrient supply with all necessary raw minerals for proper shell formation. Attention to optimal nutrition is recommended throughout the laying period and is becoming even more significant since as the laying period of flocks is being extended. With increasing age and cumulative number of eggs produced, the ability of hens to produce eggshells of good quality tends to decline. This is partly due to the exhaustion of calcium metabolism of the bone, but can also occur as a result of liver damage. Acute fatty liver syndrome or chronic congestion of the liver will accelerate the loss of shell stability with age.

The shell of a hen’s egg consists up to 90-95% of calcium carbonate which is embedded in a protein matrix that determines the strength of the egg. The eggshell is made essentially from lime, which is made available either from the daily feed supplied or from the long bones, especially the medullary bone marrow. The calcium reservoir of this bone is formed with the onset of sexual maturity until shortly before the onset of egg production. The calcium in the bone is bound to phosphate. How much of the lime actually used to form an eggshell comes from the recent dietary intake and how much from the bone varies and depends on the availability of the latter at the time of shell formation. Since the hens have only limited reserves of calcium in their bones, this must be supplemented with the daily dietary intake.

The process of eggshell formation takes place mainly during the hours of the night. The most intense period of shell formation is about 12-18 hours following the laying of an egg. The intensity reaches its peak at 18 hours after an egg is laid and starts to decline again before the next egg is laid. During this time, enough lime should be available from the gastrointestinal tract. Since the retention period of ingested feed in a chicken’s digestive system is relatively short, i.e. about 3-4 hours, it is important to feed the bird with lime at the right time. Scientific studies have shown that laying hens with ad libitum access to lime have a particularly high appetite for lime in the last 5-6 hours of daylight. Apparently, these birds instinctively know when they need more supply.

The benefits of feeding coarse lime (1.5 to max. 4 mm particle size) in the afternoon or evening hours have been demonstrated repeatedly. By doing so, the amount of the calcium derived from the feed is maximized and the calcium metabolism of the bone is minimized. Without adding to feed cost, this feeding program combines three advantages: reduced phosphorous level in the feed (saving limited resources), less metabolic work for the hens (and maintenance of bone strength), and significant reduction of phosphorus excretion. The reduced daily mobilization of calcium reservoir in the bones would reduce the phosphorus excretion.
It is obvious that an optimally timed supply of lime is important for the maintenance of bone strength. If a laying hen extracts calcium from the reservoir of her bones during the night, the lime will not only be mobilized from the medullary bone, but also from the marrow of the structural bones. This reservoir cannot be restored during very long laying sequences, unlike the reservoir in the medullary bone marrow. The laying hen can only "repair the damage" during laying pauses or moulting, which allows the lime to be stored in the marrow of the structural bones and practically rebuild the reservoir. A modern laying hen producing eggs in long "clutches", has to utilize the reservoir of the bones almost daily, compromising the long-term bone stability and increasing the well-known risk of bone fractures. For optimal implementation of these findings, it would be necessary to provide two different feed mixtures: feed with lower calcium content and finer particles offered in the morning hours, feed with a higher lime content and coarser particle size during the afternoon and evening hours. Where it is impossible or too difficult to implement this recommendation in practice, a significant effect can be achieved by supplementing the single ration with coarse lime in the afternoon and evening feedings. Experience in practice has shown that this not only improves shell stability, but also bone stability and the general health of laying hens. Mini silos to supplement the feed and provide the right dosage of lime at the right time are becoming increasingly popular worldwide.

As a general rule, we must ensure that all essential components of the feed will become available for each hen, i.e. we must avoid segregation of feed components between feed mill and the hens. This applies to all nutrient-relevant raw materials as well as minerals and vitamins. A homogeneous good mash feed structure is the feed for the modern laying hen. With good feed quality, the use of fine or coarse lime is unproblematic. In case of pelleted or crumbled layer feed raw material components were mostly milled through a hammer mill which makes it difficult to add coarse lime. In this case lime must be added after pelleting; otherwise the lime content will have little value for the laying hen.

Dr. Hans-Heinrich Thiele

Figure 2: Simplified representation of the egg - shell formation

Mini silos for top dressing of lime:

- lime fine < 0.5 mm
- lime coarse 1.5-2.5 mm
- lime very coarse ≥ 4 mm

From September 22nd to September 24th, LOHMANN TIERZUCHT’s 52nd Franchise Distributor Meeting was held in York, Canada. The official opening of the brand new pedigree farm was the primary reason for the meeting. More than 150 participants from all around the world took advantage of this unique opportunity to have a glance into the daily breeding business of LOHMANN TIERZUCHT and accepted the invitation to North America.

On September 23rd, the event at the world-famous Niagara Falls began with a day of interesting presentations by renowned speakers who covered current topics related to the poultry industry. Mr. Javier Ramirez, Managing Director of LOHMANN TIERZUCHT, opened the event and took the chance to speak proudly about the developing success of the company. There are only 20 remaining countries on the world map where LOHMANN TIERZUCHT has not entered the market yet. It is becoming very obvious that there is no doubt in the outstanding quality of LOHMANN TIERZUCHT’s layers. Clever marketing tactics can open up new opportunities for a successful business by the respective distributors. The company is always ready to take on new challenges and is prepared to develop itself and its products further to adapt to new situations in the market. This was emphasized in the interesting presentation held by Prof. Dr. Rudolf Preisinger, Managing Director and Chief Geneticist at LOHMANN TIERZUCHT. With its sophisticated breeding program, the company is able to improve on classic traits like egg number, egg weight and livability to a very high level. These also include traits like beak shape, beak length and nesting behavior, all of which have gained importance in recent years. New breeding methods like genomic selection which has already been well-integrated into the breeding programme at LOHMANN TIERZUCHT for two years now, enable the company to enjoy a much faster breeding progress than ever before.

The presentation held by Mr. Jørgen Kjaer, Scientist at Friedrich Löffler Institute, gave an interesting overview on feather-pecking and cannibalism in layers. The scientist has been involved in investigations for a better understanding of the appearance of misbehavior in birds for many years now. He mentioned that through different studies, it is now widely known that feather-pecking and cannibalism are caused by several factors. The focus of prevention should therefore be placed on optimizing layer management. He also mentioned that with a well-organized breeding program, it is possible to select birds with a weaker tendency towards feather-pecking. After a series of investigations, he could conclude that hens with a higher drive to feather-pecking and cannibalism are more active and show a higher content of stress hormones, e.g. Corticosterone, in the blood.
Dr. Hans-Heinrich Thiele and Mr. Farhad Mozafar, both responsible for Technical Service at LOHMANN TIERZUCHT, held a lively debate on the pros and cons of moulting in layers. Throughout the whole discussion, Dr. Thiele emphasized his opinion that moulting in modern layer type hens does not make any sense. With an optimized management, Lohmann hens show outstanding persistency which makes moulting unnecessary. With examples from the field, he did some calculations showing that moulting does not necessarily improve the economic situation of a layer operation. With opposing views, Mr. Mozafar stated that it is widely known that moulting can improve the egg shell quality in the end of the laying cycle and that this improves the number of viable eggs. Besides that, moulting reduces the number of male chicks which is from an animal welfare point of view a very valuable argument. The discussion showed very clearly that there are no real pros and cons for or against moulting. It is always a question of the situation of every poultry operation and the market it is operating in.

The “Challenges of today’s layer nutrition” was the theme of Mr. Robert Pottgütter’s presentation, nutritionist at LOHMANN TIERZUCHT. Today, the high demands of soya in the nutrition of animals is being more and more criticized as the cultivation of this plant is in the region of Central and South America. Moreover, in Europe, the use of soya in layer diets is controversial in terms of ongoing GMO discussions. In order to escape this dispute and to counter the high soya prices, questions are constantly being posed about alternative feed ingredients.

In his presentation, the experienced nutritionist expressed that there are indeed alternatives to soya in layer rations, e.g. rape and sunflower. It is, however, of great importance to take the quality of these raw materials into account so as to avoid having a negative impact on the performance of the birds. Investigations in practical trials have to be performed in order to determine which extruded soya can be excluded in layer feed. If soya would be reduced, then the application of synthetic amino acids in the feed is of main significance. Of course, it is relevant how much soya is replaced by synthetic amino acids in the feed, as this reduces the application of synthetic amino acids in the feed is of main significance. The use of organic acids in the layer husbandry was the subject presented by Selko Feed Additives’ Mr. Christian Lienesch. It is becoming more and more important to reduce the application of medication in layer husbandry or better still, to do away with it completely. Applying organic acids in the feed or drinking water can help to improve gut health in layers, thereby improving their resistibility towards pathogenic agents. Mr. Lienesch mentioned that although there are many different acids that can be used, one has to take into account that they each have a different effect on various pathogenic agents. Some are useful against E.Coli and Salmonella whereas others are effective in treating mold and yeast. It is therefore necessary to investigate the situation at every farm very closely before choosing a suitable acid.

The last presentation of Prof. Paul Siegel, Virginia Tech University, covered the development of the poultry industry. In his lively presentation, he illustrated how humans managed to domesticate the original Red Jungle-fowl (Bantus) to the modern laying hen. The experienced scientist stated that aside from the chickens themselves, which are the base of a poultry breeding company, it is actually the people who are working within a company which are of great importance to guaranteeing the success of any breeding company.

On Wednesday, the 24th of September, the grand opening of the pedigree farm was celebrated. With an official ribbon-cutting ceremony, both managing directors, Prof. Dr. Rudolf Preisinger and Mr. Javier Ramirez, opened the doors of the farm for a well-organized tour. Divided into groups, the visitors were allowed to explore the farm by visiting different stations within the building. This gave a very good overview about the quality of the building and familiarized the visitors with the breeding programme at LOHMANN TIERZUCHT. At eight different stations, each visitor was given a detailed explanation on how different traits are measured at farm level, i.e. before the values of the same are entered into a database. This allows the geneticist to derive conclusions on the breeding value of every hen. Demonstrations on how artificial insemination is done in pure line hens were carried out at one station. The visitors got an idea of how accurate the laying performance and the egg weight of each single hen are determined. Much attention was drawn by the egg quality station. Here, there was a demonstration on how the breaking strength of eggs is recorded. Not only is the “output” of the hens (the eggs and their quality) of main interest for the respective geneticist, but also the “input” is of crucial importance. Of course, it is relevant how much feed the hens need to produce eggs; this is precisely recorded for every hen in different phases of their lives. The results have an influence on the breeding value of every hen. The guided tour of the breeding farm and the well-organized explorations at the different stations made the visitors aware of the complexity of LOHMANN TIERZUCHT’s breeding program.

The program was enhanced by diversified leisure activities. A boat trip going literally into the Niagara Falls and an excursion to a historic village of native Indians at “Crawford Lake” enabled the visitors to get in touch with the incredible nature of Canada and its native culture. During a trip to the wineyard “Jackson Triggs”, guests could taste the quality of the regionally produced wines. The tour was the perfect opportunity for visitors to interact with each other and share valuable information and experiences in relation to their businesses.

**CANADA 2014**

Great event at the falls.

**Article:** Djanet Olud-Ali

**Photos:** Stella Schnor
Commerical or modern poultry in Pakistan is one of the largest agro-based segment of Pakistan, that was established in 1962, having an investment of more than 732 billion rupees (7.32 Billion USD). The poultry industry of Pakistan is making a tremendous contribution in bridging the gap between the supply and demand of animal protein. About 25,000 poultry farms have been established in Pakistan. Moreover, the annual growth rate of poultry production is about 10 to 12% whilst 40% of the total meat production is being procured from poultry products. Furthermore, other poultry products that are annually in Pakistan are followed by table eggs: 9410 million; chicken meat: 953.600 metric tons.

The International Poultry expo (IPeX) was held from 25th to 27th September, 2014 at The expo Center, Lahore. On this occasion, different local and international poultry companies, poultry feed manufacturers, poultry farm consultants and poultry equipment manufacturing companies exhibited their products at this expo. The Federal Minister for Food Security and Research, Sikandar Hayyat Bosan, inaugurated the International Poultry Expo. He elucidated his remarks on the topic of ‘Avian Health’. "He said that Pakistan was the 11th largest producer of broiler chickens in the world as its poultry sector was growing at a pace of 10% annually, adding that this sector had 6.1% share in agriculture and 10.8% in the livestock sector. "Brazil is the largest exporter of halal chicken to Saudi Arabia, and Pakistan has all the potential to make inroads to this market," he said, adding that the country’s poultry industry could also exploit the need of Gulf countries for halal chicken. After the address of the Federal Minister, the event was started.


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The most interesting part of the IPEX were talks by inspiring great personalities which were held on 25th September, 2014. The Chief Organizer, Chaudhry Shaukat Hussain, started the inaugural session of the conference and enlightened the participants on aims and objectives of IPEX. Other delegates, e.g. Mr. Raza Mehmood Khurram, Chairman of PPV (Northern Zone), Dr. Muhammad As Iain, and Mr. Khalil Sattar also addressed the importance of poultry farming.

The 1st technical session was co-chaired by Dr. Muhammad Sadiq and Dr. Naem Tanj. In this session, different speakers like Dr. Mustafa Kamal, Dr. Hamid Nazir and Dr. Muhammad Riaz elaborated on modern broiler management, spray & other vaccination techniques, respectively. The 2nd technical session was co-chaired by Mr. Khalil Sattar and Dr. Khurram Shafi Qazi. In this session, Dr. Khalid Naem Khawaja presented a recent update of Newcastle disease. Eng. Tanj closed this session with an informative talk on farm ventilation.

The event finally ended on 27th September with lots of informative ideas regarding poultry farming. By these innovative ideas we can flourish Pakistan’s poultry industry.

VIV Asia
11th - 13th March 2015, Bangkok, Thailand
From 11th to 13th March 2015, the VIV Asia will take place in Bangkok, Thailand. The team from LOHMANN TIERZUCHT GmbH will once again participate in 2015 with a new innovative booth in hall 106, stand B61. We are looking forward to interesting talks, an international exchange with the highly qualified trade audience and overall, to a promising and successful time in Bangkok.

Lohmann School
18th - 22nd May 2015, Cuxhaven, Germany

Lohmann Hatchery Course
7th - 11th September 2015, Cuxhaven, Germany

53rd Franchise Distributor Meeting
28th - 30th September 2015, Istanbul, Turkey
Mr. Ter Heerdt (39), has gained a broad experience within the layer sector of the poultry industry over the years. After completing his masters in International Business, he started his career in 2002 as a Sales Manager at Hatchery ter Heerdt in the Netherlands. For the last seven years, he has been active in this family-owned company as a Commercial Director and he is still one of the main shareholders of the company.

Hatchery Ter Heerdt is a market leader in selling pullets and day-old-chickens in the Netherlands and is also a successful distributor for LTZ. Ter Heerdt: “I am very pleased to work for one of the world’s leading companies in the layer industry specializing in the genetics of layers and with colleagues who are fully dedicated to working on very high standards. Owing to my experience of working with the breeds of the company, I have been able to witness outstanding results and great laying performance of the birds.”

Javier Ramírez adds: “We are delighted to welcome Chiel as our new Marketing Director of LTZ. We are sure that his profound knowledge of the international egg layer industry together with his entrepreneurship and marketing skills will enable him to further develop the continuous success of our companies.”

Our long-term customer HasTavuk comprehensively described their businesses and the corporate philosophies behind the same in their respective corporate video.

Our new data recording and flock management tool Flockman4U

Our new data recording and flock management tool Flockman4U - you might recall the article in our last issue of PN 2/14 - is rapidly gaining popularity. More and more customers are subscribing to this service, recording their data and controlling the performance of their own flocks. Furthermore, ranking tables and graphs depicting their own flocks in comparison to our standards and/or the average of comparable flocks are being analysed to improve the performances of the user’s own flocks. Of course, all data are handled in an anonymous and confidential manner.

Our database is growing and so comparisons are becoming more precise and informative. Have you already registered? It’s easy: just fill in the form on our website www.ltz.de or directly on the tool’s site http://ltz.flockman4u.com. We’re looking forward to your input!