

FACTS » that « FIGURE

1 | 2018



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H&N ON THE ROAD TO SUCCESS

Genetic progress, expansion into new markets or recovery of old customers as well as internal innovations – no matter which area, the signs at H&N are based on forward-looking progress and success.

Technical innovations can make our lives easier, whether in the private sector or in the poultry industry. A big step in this direction is our online ordering system, which we would like to introduce to you again in this issue. It represents for all sides a simplification and considerable improvement of the entire ordering process. Fast and direct contact with us, taking special customer requests into account, avoidance of communication errors and problems in advance are just some of the advantages. The tool offers also an overview of already delivered flocks and provides you with a production forecast as soon as you place your online order. Consequently, we are also focusing on developing new apps and programs, aimed at enabling you to manage our breed better and simplifying your daily work processes. This issue devotes special attention to our data collection and flock management program "Flockman4you". The worldwide database which we build up with this tool and the possibility to compare your flocks with similar flocks is a valuable and interesting evaluation.

Of course, our success concept is not only technology-based, but also derives its strength from the aspects that have always distinguished us: an outstanding product and excellent after sales service and customer relationships. As a result, we are optimising our internal structures and con-

stantly expanding our workforce, e.g. with our newcomers Xavier Arbe and Fer-

nando Carrasquer in the technical service department, to ensure that these components continue to work for you. Technical innovation and a promising infrastructure are the means to make collaboration with our customers as profitable as possible for all stakeholders. Numerous training courses on our part worldwide and the technical contributions of our experts at various events organised by our customers, or on a consultancy basis, serve this purpose.

Finally, we would like to draw your attention to our new publication: "H&N technical TIPS". This is a technical publication, issued on a regular basis, which always deals with one specific topic. The first issue of our "H & N technical TIPS" covers the nutrition sector and can already be downloaded on our website www.hn-int.com.

But for now, enjoy reading our latest issue of Facts that Figure.

Sincerely yours,

Javier Ramírez Villaescusa
Managing Director



KEEP CLOSE CONTACT WITH CUSTOMERS:

New ideas, tools and technological innovations



H&N has vast experience in the layer breeding sector with a history of more than 70 years since its foundation. At H&N we want to create greater customer intimacy and maintain active communication and collaboration with distributors and producers. This is the „magic formula“ to identify at the right time the changes and new needs that arise in the markets. This is the only way to adapt and fine-tune the selection goals of H&N layers in the right direction and at the right time to provide an appropriate and sustainable response to the egg market in the long run. H&N is therefore highly committed to create innovative tools that can be used real time and anywhere to provide the latest management data and recommendations for a successful performance in the egg business.

In addition, it is also important to remember that breeding companies must constantly be in close contact with their customers to organise logistics and ensure the supply of breeders, specially when faced with the on-going threat of disease and the strict export limitations any outbreaks obviously imply. A good example of this problematic is the Avian Influenza outbreaks that have occurred worldwide in the past decade.

FSP - “Flock Surveillance Program”

FSP-Online is a useful management tool developed by H&N which is already in use. This system is an efficient replacement for the old Excel sheet and first week mortality reports. The corresponding information of a chick delivery can be easily ente-

red and updated in the system, i.e. arrival times, house temperature or mortality rates. Pictures, videos and comments, as well as data logger files can be uploaded. The online link that gives access to this tool will be sent to customers by e-mail on the day of hatch.

	Arrival	Mortality	Weight	
Chick quantity	1000	0	1000	
Survived quantity	1000	0	1000	
Chick weight avg	50	0	50	
Chick total avg	50	0	50	
Day 1	10	0.0%	0	0.0%
Day 2	10	0.0%	0	0.0%
Day 3	10	0.0%	0	0.0%
Day 4	10	0.0%	0	0.0%
Day 5	10	0.0%	0	0.0%
Day 6	10	0.0%	0	0.0%
Day 7	10	0.0%	0	0.0%
Total	100	0.0%	10	0.0%

H&N specification app

The performance goals with the most important parameters for all H&N birds for commercial layers and parent stock can be consulted off-line at any time in this app. This tool gives farmers an

easy and instant overview of their flock performance compared with the standard goals. This app is available for Android and iOS devices on Google Play store and Apple app store.



Brown Nick

26. Februar 2018

Transfer date 25.06.2018

End date 22.07.2019

27. August 2018

Brown Nick week 26

Body Weight (g)	1905
Production % (Hen/Day)	94.30
Eggs (Hen Housed)	39.80
Egg Weight (g)	58.50
Cumulative Egg Mass (kg/Hen Housed)	2.16
Feed conversion (kg/Kg)	2.09
Livability (%)	99.3

Brown Nick

26. Februar 2018

Transfer date 25.06.2018

End date 22.07.2019

15. Juli 2019

Brown Nick week 72

Body Weight (g)	2033
Production % (Hen/Day)	78.00
Eggs (Hen Housed)	319.00
Egg Weight (g)	67.30
Cumulative Egg Mass (kg/Hen Housed)	20.16
Feed conversion (kg/Kg)	2.21
Livability (%)	94.7

Management guides

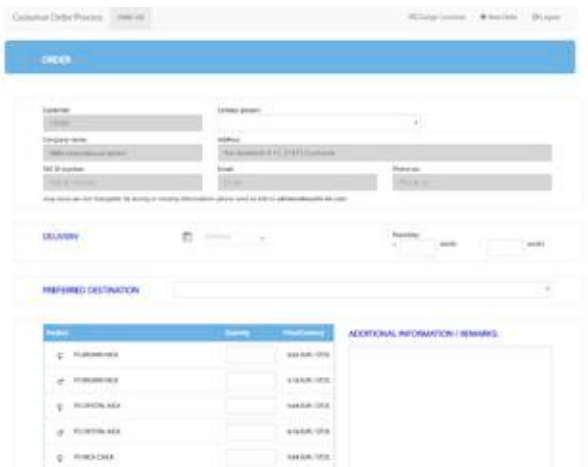
We entered a new technological era many years ago when digital versions of booklets and guides, which contain more visual aids than plain text manuals, became available. These digital versions can be easily referred to on a wide variety of devices anywhere, anytime and with interactive features. Our management guides are also being adapted to these changes; we are preparing new management guides, which are more visually oriented, with new chapters presenting more practical examples, updated feeding recommendations and reviewed performance goals. The e-Guides will be available soon online and provide additional options and information compared to the hardcopy versions. The e-Guide

will be enriched with pictures and videos, as well as practical examples on how to optimise the management of the H&N bird. It will also be possible to switch easily between different topics or go directly to a page from the table of contents or view additional information via hyperlinks. The e-Guide can be updated easily and continuously based on the requirements of our customers, feedback from the field, and new insights gained from research. This generates an unlimited information flow that is available 24h a day, no matter where our customers are, in their pocket! The first e-Guide is already available for the Hatchery Guide in a brand-new and very practical guide concept.

COP - "Customer Order Processing"

H&N's new Order-Online system was introduced almost one year ago. Today all orders for parent stock flocks are placed by our customers using this efficient tool. The benefits of this system are clearly evident for both sides. The huge benefits offered by this system include the easy ordering procedure of future flocks without any delays or complicated procedures, and a handy overview of delivered flocks and graphical production forecasts. The orders can be incorporated, changed and corrected easily by customers and changes are immediately forwarded by the system to the H&N staff responsible for further actions. New useful tools such as

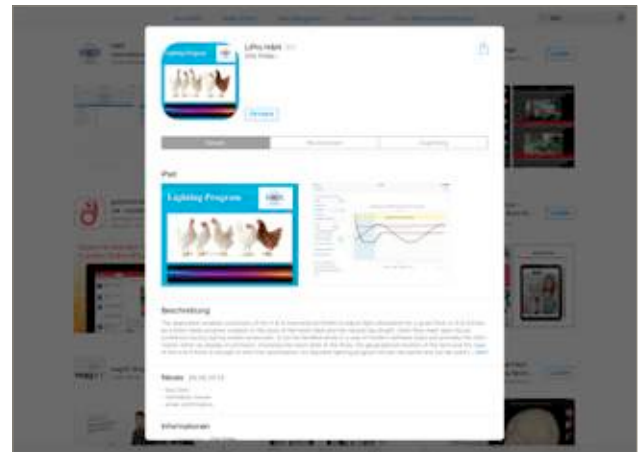
summary of first week mortality of delivered flocks have been added to this system. Furthermore the "Surplus" feature allows you to decide if you want to receive more day-old chicks than ordered in case there is a surplus of chicks at the day of hatch. Additionally, all relevant shipment documents are uploaded to the corresponding order and permanently available for customers. You have also the possibility to get a production forecast of future orders which are already placed for the next two years. Our planning, genetic and production department can provide you with the best preparation for your flocks.



Lighting program app “H&N LiPro”

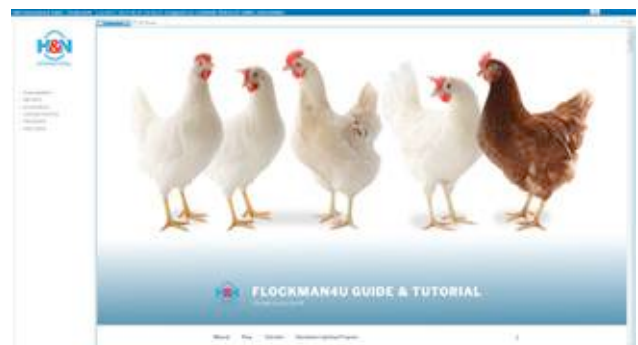
The lighting program is crucial and should be carefully defined according to location, farm conditions in rearing and production, as well as the egg size requirements of the producer. Although the farmer’s technical skills and experience are irreplaceable, H&N

LiPro is a great help when designing a customised lighting program, considering all the factors mentioned above. This app is now available for iPad tablets and can be downloaded from the Apple app store. The PC version of the lighting program is available as before.



Flockman4U

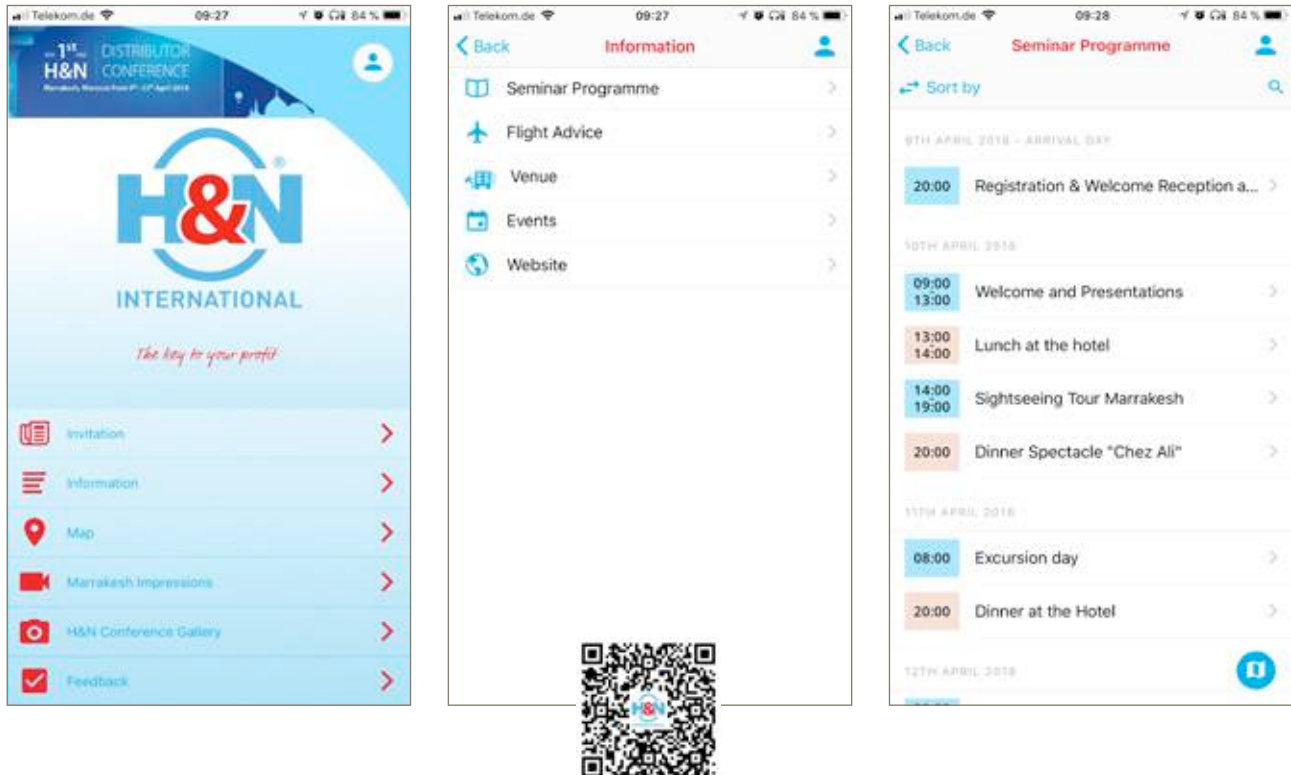
Flockman4U is a modern data collection system which outphases the Excel templates and production charts used in the past. It is a web-based management and monitoring tool for parent stock and commercial flocks to easily record and visualise data in the form of graphs and tables compared with the standard goals. Various valuable reports are presented in the program, for instance a ranking of all customers’ flocks or an anonymous comparison with flocks in the database under similar conditions.



H&N DistriCon -event app

All important information such as registration forms, seminar programmes, flight advice, etc. has been implemented in this app.

This app will be regularly updated to list all upcoming H&N events in the future.



Technical service support

H&N not only supplies an excellent layer for the specific markets: the package we offer includes service and technical support that helps farmers to manage the birds appropriately, to allow H&N birds to express their full genetic potential. We aim to offer the most efficient support to facilitate our customers in making optimum decisions to maximize their profitability. To reach this goal, the global technical service of H&N has been strengthened in the last years for a greater presence in the field. One of the roles of the technical service team will still be detecting and solving problems that may occur in the

field, but the strategy is to shift the focus from trouble-shooting to problem avoidance in the first place. This means that we regularly visit customers to improve weak points and train their staff. We can provide support and guidance in situ to improve their management approach and resolve potential issues before they have a chance to occur. Not only has the visiting frequency increased, our team is also in permanent contact with customers and interacts with them through video conferences, which makes communication faster and easier.

Final remarks

There is a continuous and dynamic feedback, with a permanent exchange of information, between breeding companies, incubation companies and egg producers. Moreover, we are strengthening the relationships with the customers using new tools and new human resources to generate the optimal H&N layer with the specific characteristics required by each of the markets now and in the future. Once again, we want to thank our customers for

the loyal relationship and greatly acknowledge their collaboration and cooperation, as well as their open discussions and comments that help us improve and become better. We look to the future with great optimism and are extremely confident that these new tools and ideas will contribute to enhance our strong and successful business relationship with our customers and make our lives easier.

Dr. David Caveno Pintado



NEW RESPONSIBILITIES IN T – H&N'S CORE UNDER NEW

Starting in October 2016, Dr. David Cavero Pintado took over the position of “Chief Geneticist” at H&N INTERNATIONAL GMBH. Dr. Cavero was promoted as the new person responsible for this position and will continue to run the successful breeding programmes of H&N INTERNATIONAL.

Career and Experience

Dr. Cavero was born in Madrid on June 6th 1977. He completed his University degree in Agricultural Engineering at the Universidad Politécnica de Madrid (Spain) in 2002. In 2006 he obtained his Ph.D. in Animal Science from the Christian-Albrecht University in Kiel (Germany). Since September 2006, he has been working as a geneticist at two of the world's leading layer breeding companies: H&N INTERNATIONAL and LOHMANN TIERZUCHT GmbH in Cuxhaven, Germany.

Guarantee for continued success

His long track-record of experience at the company will be the best choice to guarantee the seamless transition of the dedicated and passionate work on the genetic improvement of birds in line with market needs. This forms the foundation of the success stories of our company and Dr. Cavero can ensure the continuity of this success.

Technical Service News

In addition to his new role as genetic director, Dr. Cavero took over the task of the coordinator of the Global Technical Service Department of H&N.

The technical service team covers many different areas varying from flock management, incubation, pathology, nutrition, information technology to quality management in order to ensure the exceptional after sales service that H&N INTERNATIONAL provides to its customers.

For this purpose, Dr. Cavero also welcomed two new members in his team.

Mr. Xabier Arbe has been in charge of the nutrition division since July 2017. Xabier Arbe is a veterinarian specialised in animal production.

After graduating from the University of Zaragoza, Spain in 2004, Xabier worked



THE GENETICS DEPARTMENT DIRECTION



Dr. David Cervero Pintado



Mr. Xabier Arbe



Mr. Carrasquer

with the largest egg producer in Spain as a field veterinarian and was in charge of the company's R&D department.

He later took on the role of the production manager and nutritionist of the company. Xabier joined Novus Europe in 2009 as the technical manager for Spain and Portugal. He was also the poultry and feed hygiene specialist for Novus Europe.

In 2012, Xabier was transferred to Novus South East Asia Pacific where he worked as the regional technical manager and since October 2015, he worked as head of technical services for Novus South East Asia and South Asia Pacific.

We also welcome another newcomer to the veterinary field: **Mr. Fernando Carrasquer**. Mr. Carrasquer was born and raised in Aragon, in the north east of Spain. He obtained his DVM from the Universidad de Zaragoza but went to France for his final year as part of the Erasmus student exchange programme to the Ecoles Nationales Vétérinaires de Lyon. He was awarded a Certificate of Advanced Veterinary Studies (CEAV) in health and quality management in poultry and rabbit production from the French Ministry of Agriculture.

Mr. Carrasquer started his professional career in 2007 working as an in-company

veterinarian for two of the largest egg producers in Spain in the Madrid region. After eight years he moved to Aviagen Spain, where he worked as a production manager for grandparent stock in the Barcelona region. The expansion of the technical service team and the new head of this department will make a further contribution to ensure that H&N INTERNATIONAL continues to be

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FINAL INNING FOR RICH WALL – MR H&N SEEKS RETIREMENT

Just like his father, Rich Wall has always been involved with chickens. His favourite varieties are Cochin Bantams and Japanese Bantams, and of course since 1988 NICK CHICK, BROWN NICK and SUPER NICK. 1988 was the year in which he was appointed Sales Manager at H&N INTERNATIONAL GMBH where he would subsequently be promoted to the position of Vice President. Even before then, he was totally at home in the poultry world as a farm manager at Shaver Poultry, as a hatchery specialist at Butler Mfg. Co, a layer management consultant at Chilson's Management Controls and as a salesman at Marcaro International he gathered considerable experience, which in subsequent years at H&N INTERNATIONAL he put to good use delivering a huge contribution to the steady growth of the company and its ever expanding worldwide success. Rich looks back on the whole process with a sense of pride.

Rich particularly enjoyed the two round figure birthdays of H&N he celebrated during his time at the company: the 60th that took place in Renton, and the 70th in 2015, in Bangkok. At the same time, every H&N seminar represented something special for Rich. Particularly clear in his memory is of course the final H&N Academy in 2017. Even during the presentation of the attendance certificates, it became abundantly clear how much Rich valued the ties with H&N and its customers. There were very few participants about whom Rich could not tell at least one anecdote or

short story. That ability alone made the process particularly personal and entertaining for everyone.

When asked what he would most miss, Rich replied: "My colleagues and the customers". That's what distinguishes him and his work for H&N INTERNATIONAL.

We would like to take this opportunity to wish Rich all the best for the future. He'll now get to spend more time with his wife Lina and the rest of his large family including 10 grandchildren and two great grandchildren. Thank you for the many years of successful cooperation.

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20 YEARS HAVE FLOWN BY— MICHAEL SEIDEL IN RETIREMENT

Michael Seidel joined H&N INTERNATIONAL in 1998. He started as assistant to the then Senior Sales Manager Mr Klein, with special responsibility for the marketing department which was still very much in its infancy. The focus of the position was in fact an introduction to his tasks as successor to Mr Klein. Mr Seidel spent many successful years as Sales Manager for H&N. Following the restructuring of the sales department in 2015, as Director Business Development he became responsible for special projects. After almost 20 years, the final whistle has now sounded on his career,

at the end of 2017.

Michael Seidel looks back on the steady growth of H&N with considerable pride, growth that he achieved together with his initially modest and as the years went by ever larger sales team; pride also in having overcome some difficult periods thanks to AI and other export restrictions.

Finally, we would like to express our gratitude for the wide ranging and successful support and cooperation!

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*We wish you
all
the
Best*

H&N IS INTRODUCED ON THE SWEDISH EGG MARKET



Early this year, the H&N laying hen will be introduced on the Swedish market. The companies behind this venture are European Layers Distribution (ELD) and H&N INTERNATIONAL with its subsidiary H&N Sweden AB. This means that Swedish egg producers will have an additional laying hen hybrid to choose from, in addition to the existing Lohmann and Bovans. „We are always looking for new market opportunities, and now we believe that the Swedish market will fit our hen well” says Symen van der Velde, chairman of the board at H&N Sweden AB.

SUPER NICK and BROWN NICK

Swedish egg producers have had access to the two hybrids of Lohmann and Bovan for a long period of time. They are now challenged by H&N Sweden AB which currently has placed 20,000 PS at their quarantine farm in Sweden.

The lines taken into Sweden by H&N Sweden are SUPER NICK and BROWN NICK. The demand for these birds has risen rapidly in several countries, measured by the trend in market growth. In the Netherlands, these chickens were introduced three years ago and already have about a

quarter of the market, which means that there are at least 10 million H&N hens in production in the country – that is more than the entire Swedish market.

The question for the Swedish market is do SUPER NICK and BROWN NICK match the well-known female hybrids like Lohmann or Bovans? Does this hen have the quality and production capacity that makes it possible to enter the Swedish market? Of course, that is an answer that can only be given over time, but Chairman of the Board Symen van der Velde says “We have a good quality hen that is ideal for

keeping pullets in free systems. She is stable with good behaviour. Mortality is low and egg production high. But as always, the degree of production success is also dependent on feed quality and management of the highest grade.”

Deliveries in early 2018

H&N Sweden currently has 20,000 chickens in quarantine in Sweden. Swedish legislation states that imported day-old chicks should be quarantined until all the necessary testing has performed. The quarantine period can be completed at

the age of eight to nine weeks if everything is satisfactory explains Christoffer Anderson, acting CEO at H&N Sweden. The plan is to deliver the first chicks to rearing facilities in April this year. The birds will initially be reared by external breeders, but in the future H&N Sweden will be able to also sell 15-week pullets to egg producers. "We are starting by introducing day-old chicks to the market but the plan is to also include rearing in our business activities."

Hatching in a broiler hatchery

"Initially we considered investing in a new hatchery with new machines. But such a big investment at the beginning, when introducing a product on a new market was considered risky" says Symen van der Velde and continues "A new hatchery must also have access to knowledgeable personnel. All in all, these two factors made us search for an existing hatchery in Sweden for cooperation". They selected SweHatch, owned by Scandi Standard, which is the largest poultry company in Scandinavia.

"We are very pleased with this solution, which gives us access to both the hatchery and the skills available at SweHatch," says Christoffer Anderson.

H&N Sweden has a capacity of around two million day-old chicks for the first years, but the plan is to sell around one million. Egg producers on the Swedish market have long term relationships with their suppliers of day-old chicks so H&N Sweden is entering

the market knowing it will take hard work and concerted effort to gain market share. "We have an advantage compared to our competitors on the market," says Christoffer Anderson. "Since we are part of the EW-Group we have colleagues around Europe. That means we can utilise the number of hatching eggs to a maximum so we do not need to sell eggs for the industry price. Our competitors are not part of a group like us and

might incur higher costs for hatching eggs that do not hatch."

Starting a new business venture like this is always risky but with all the experts and knowledge available at the EW-Group and SweHatch, they are very enthusiastic about the prospects ahead. Symen and Christoffer both agree that the response they have met on the market this far has only been positive and they are really looking forward to placing the first commercial layer chicks.

Leon Schouren





A typical cage-free barn with 4 tiers

NICK CHICK GAINING MARKET SHARE IN THE NORTH AMERICAN MARKET



It has been since April 1st, 2017 that H&N North America LLC (H&N-NA) took over the sales and technical service for H&N products in North America. H&N-NA was formed at the end of the distribution agreement with Centurion Poultry Inc., through a partnership between H&N INTERNATIONAL and Nelson Poultry Farms Inc. H&N-NA is based in Manhattan, KS, and integrates the production and hatching facilities of Nelson Poultry within the chick supply network of H&N North America.

With the retirement of Jack Merrill at the end of June 2017, Merrill Poultry Farm Inc., a family outfit that has been in layer chick business for more than 90 years, was dissolved and ceased to operate. As a result, H&N-NA became the sole distributor of H&N day-old-chicks in the US and Western Canada.

Having a production agreement with Hy-line North America gives H&N-NA the ability to deliver day-old-chicks to all regions of the North American market, and grants access to a comprehensive network of parent-stock farms, hatcheries and chick delivery vehicles that enable efficient and reliable nation-wide supply of large chick orders, to meet the demand of increasingly large complexes.

Technical service is one of the main pillars for success of H&N worldwide, and the North American market is no ex-

ception. The sales team is comprised of well-established poultry experts with long experience in different aspects of the layer business. In addition, H&N-NA has access to services of the technical team of H&N international, that includes geneticists, nutritionists, veterinarians and experts in cage-free management, some of which lived thru the transition in housing systems in Europe and learned from the experience of working with cage manufacturers to improve their systems.

In addition, customers of H&N-NA have the opportunity to participate in a week-long technical course, referred to as H&N Academy, held in Cuxhaven, Germany, hosted by H&N INTERNATIONAL and focuses on current technical topics thru a series of presentations given by experts in the discipline, and includes relevant field visits. Five customer delegates from the US participated in 2017, and were accompanied by the H&N-NA sales & service team. The academy is a platform that allows for interaction of attendants from all over the world to exchange ideas and learn from each other's experiences. H&N Int. also hosts a hatchery academy that focuses on hatchery related issues, and is attended by staff of H&N distributors.

Cage-free systems built in the US are predominantly unique, focusing on efficiency of production and on minimizing the foot-print, leading to heavy bird population in multi-level, multi-tier barns. While these systems come with management is-

ues that are equally unique, bird behavior remains the same and lessons learned in Europe are generally applicable in the US.

Nick Chick continues to excel and gain market-share, despite the weak egg prices that prevailed since January 2017. In addition, the surplus in Cage-free eggs in several regions has caused many cage-free projects to be put on hold, and disrupted placement schedules. Gains were noticeable in cage free and enriched cage facilities, due to the docile demeanor of the bird in the pullet house. The NICK CHICK pullet can easily be trained move in the cage-free system and find feed and water. As a result, flocks are grown uniform with good feathering and low mortality.

In the layer barn NICK CHICK flocks attain high peak production with excellent persistency. Egg size grows quickly, and desired case weight is attained early, along with excellent egg quality, both interior and shell quality. The bird also responds well to egg-size control strategies, producing impressive numbers of saleable eggs, at a respectable feed efficiently that earns the producers a return hard to beat in the market.

With the above-mentioned performance characteristics, the comprehensive distribution coverage, and the expert technical service, H&N-NA is posed to continue to grow in market share and further contribute to the success of the North American egg industry.

Khalil Arar, President | H&N North America, LLC

H&N ACADEMY 2017



Last year's H&N ACADEMY took place from 10–14 July in Cuxhaven. Our invitation to attend the Academy for training and to exchange experiences was responded to by 41 people from 20 different nations. As always, the technical service team arranged a varied programme.



Welcome

The Academy started on Sunday evening with a welcome dinner for all the participants, so everyone had a chance to get to know each other.

Training starts

Next morning the training programme kicked off with a short company presentation, followed by some general topics like hatching egg handling, housing and brooding and rearing management. Day two focussed on feeding, feed formulation and feed structure. In the afternoon the attendees could choose between visiting the feed mill or the veterinary laboratory, or spending some leisure time in Bremerhaven.



Veterinary issues

On Wednesday morning the programme was led by our team from the veterinary laboratory, afterwards our technical service team took over and gave lectures on hygiene and biosecurity, the world egg industry and cage-free management. In the evening, the sweet singing voices of the participants were put to the test during our karaoke session after dinner.

Production management

On Thursday, almost the last day in Cuxhaven, various presentations were given on production management, poultry red mite and genetics and breeding. The participants were also informed about our Flockman-



4you program and gained some practical experience. In the evening after the social dinner, the certificates of participation were presented.

Excursion

The training finished with a visit to Big Dutchman and EW-Group on Friday. Afterwards, the group travelled to Bremen where everybody could end their stay by spending some time shopping, sightseeing or just relaxing.

We are looking forward to our next H&N ACADEMY in 2018.

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VIV ASIA 2017

VIV ASIA took place from 15th–17th March 2017 in the vibrant city of Bangkok, Thailand. H&N INTERNATIONAL was pleased to present its new booth concept in Asia, too.

World's leading trade exhibition

The exhibition was a great success for H&N INTERNATIONAL. We were very pleased to meet a large number of valued customers and potential business partners. The vibrant setting of the world's leading trade exhibition, that presents the entire feed and meat supply chain, was the ideal platform to share our knowledge and ideas.

An impressive number of industry professionals visited VIV ASIA with numbers of international exhibitors and visitors being more than satisfactory.

Importance of Asian market

As the Asian market is one of our most important ones, we were happy to welcome so many international customers, especially from Asia, to our booth. Close collaboration with our customers helps us to make our brand even more successful and underlines again that H&N INTERNATIONAL is

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H&N WELCOMES BROOKDALE FARMS BACK AS A PHILIPPINES DISTRIBUTOR

Brookdale Farms Corporation in the Philippines is part of the Brookside Farms Group of Companies. The group was founded by the Ho family in the early 1980s. Before they started their own layer chick business, the family were already active in the swine and commercial egg industry. The company is also involved in the restaurant business. Today, in addition to layer chick distribution and commercial layer farming, their pig breeding business and commercial pig business continue to grow. Meat processing is the company's latest undertaking.

New venture – PS layer business

In the early 1990s, the company decided to embark on a new project: the distribution of layer chicks with their own breeder farm and hatchery. The farm is located in Capas, Tarlac which is around 100 kilometres north of Manila, the capital city of the Philippines. In their first year, they imported 5,000 SUPER NICK parent stock. This was followed by a five-year period of gradual expansion due to the increasing demand for day-old chicks in the Philippines. During that time, they steadily grew from 5,000 SNPS in the first year to about 25,000.

Crisis and discontinuation

A period of crisis in the Philippine chick layer sector forced many industry players to reduce their PS intake and this included Brookdale. After a number of years with H&N, the SUPER NICK PS intake of Brookdale was discontinued.

After several years, Brookdale resumed imports of SUPER NICK parent stock. On 26 February 2017, a flock of SUPER NICK PS chicks arrived in Manila from Canada and

were placed at Brookdale's breeder farm in Tarlac. At present, SUPER NICK day-old commercial chicks coming from Brookdale's own PS flocks were already placed in their company owned farm. They have also started selling SUPER NICK commercial layer chicks to their valued customers.

Renewal of partnership

Today, Brookdale is the third largest day-old layer chick supplier in the Philippines. They currently have monthly production of 364,000 layer day-old chicks and numbers are projected to grow in the coming years. They have been in the layer breeding business for 26 years. Ably managed by a dedicated team of experts in poultry breeding operations, the renewed partnership between Brookdale and H&N will surely meet with great success. H&N is committed to unite with Brookdale in their mission of "Uplifting lives by providing world-class yet affordable food for the Filipino household".

In a country with a rapidly growing population, there is an inevitable need

for a cheap but rich source of protein like eggs. A supply of very prolific and sturdy layers such as SUPER NICK which produce consistently saleable eggs with good egg shell quality and egg weight suited for the Philippine market is a must.

Gilbert Cervantes | Rich Wall





New customer in Mexico- ECO AVICULTURA

Eco Avicultura is the latest H&N customer in Mexico. The company was established in 2004 for the production of hatching eggs in the state of Chiapas. The company employs 33 employees, who serve the breeding sector. Its founders, M. Manuel Cruz Esquinca and Mr. Magali Chavez Guillén and their family, work hard to support and expand the company.

Company details

The company consists of three farms for parent stock breeding and production with a capacity of 50,000 breeders, as well as a hatchery and a food plant (which is under construction). The chicks are marketed as one-day old and also older.

Eco Avicultura has placed parent stock of NICK CHICK, BROWN NICK and CORAL.

This will enable them to serve the white, brown and tinted segments of the Mexican egg market.

Successful partnership

Long time H&N Latin America Area Manager Ronald Trenchi states "We're pleased that Eco Avicultura has started with three H&N products in the Mexican market.

We pay close attention to customer demands and are sure we will enjoy a very successful partnership with Eco Avicultura."

Thomas Abdo Calil



PRONAVICOLA

In the week of October 23, Pronavicola, Colombia, was visited by several representatives of H & N: Thomas Calil, Dr. David Cavero, Xabier Arbe and Dr. Ronald Trenchi.



Sales convention

In addition to reviewing the results of our breeders, we had the opportunity to join the complete group of commercial veterinarians and attend the sales convention, where each one explained the results of 2017, the perspective for 2018 and the specific challenges we face in the different regions of the country.

We had the opportunity to discuss several topics of great interest relating to genetics, nutrition and management.

Pronavicola

It was a very positive experience to have the H&N group support us in this exercise.

In the past six years Pronavicola has experienced growth in the market of 11.3 % per year on average in the brown sector. We hope to continue consolidating as the hatchery that provides the best genetics in the country. Per capita consumption in Colombia is 262 eggs per year and Pronavicola is proud to be part of that annual increase.

Sharing technical data

Apart from the internal discussions, the H&N team visited three of the largest egg producers in the region, with whom they held interesting technical meetings as well

as checking the excellent field results they are obtaining with our genetics. Pronavicola maintains a tradition of sharing technical data of commercial birds and on that occasion we analysed the history of the last 39 lots, adding up to a total of 2.5 million commercial hens.

We thank Pronavicola for its confidence in us and we are certain that growth will continue, as the the field results are very good.

Thomas Abdo Calil



MARITIME HATCHERY: A NEW FORCE IN ATLANTIC CANADA'S EGG INDUSTRY



The Breeder Farm at Maitland, Nova Scotia

Maritime Hatchery was founded and is owned by a group of egg farmers who really know and understand the needs of egg producers. The company was founded in 2016 with the specified goal of supplying the egg producers of Atlantic Canada (the provinces of New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island) with top quality layer chicks. Partners in the new venture are the Cox and Dalrymple families of Nova Scotia, the Westco Group in New Brunswick, the Lefebvre and Desillout families of Quebec and Boire & Freres Inc. also of Quebec. All of these partners have long experience hatching chicks and producing eggs under conditions prevalent in Atlantic Canada.



Maritime has state of the art breeding and hatching facilities located at Maitland, Nova Scotia and Campbellton, New Brunswick. Both of the breeding farms in Maitland and Campbellton follow the most up to date biosecurity procedures to ensure the best possible health status for the chicks they supply to their customers. The Campbellton hatchery only produces layer chicks which is another step in maintaining optimal biosecurity and health status for the chicks.

General Manager Brad Dalrymple explained that they had been looking for a white egg layer strain that would offer the best genetic potential for their customers. Thus they are excited about obtaining a distributorship for H&N NICK CHICK. Brad went on to say they are confident the NICK CHICK will be the layer chick of choice for the egg producers of Atlantic Canada.

Rich Wall

DATA RECORDING AND FLOCK MANAGEMENT SERVICE

For many years, H&N has provided Excel templates and production charts to keep track of commercial and parent stock flocks. Production performance as well as comparison with the respective standard can be seen instantly in graphs and tables. If this data is recorded on a weekly or (better) a daily basis, problems can be detected early enough to find appropriate responses and solutions. However, these tools had some major shortcomings: only one file per flock

is saved and comparisons with previous flocks or even the average of last flocks are difficult. Our new service offers the solution: a web-based, easily accessible data managing and monitoring tool for parent stock and commercial flocks. It can be found at:

<http://hn-int.flockman4u.com>

A license management system grants different rights to use the application (e.g. input of data and reports of own flocks only / authorisation to see sophisticated comparisons

/ authorisation to access the lighting program etc.). The level of rights can be set up according to the customer's specific needs.

Now there's only one hurdle to take before using our new web application: apply for customer access at ts@hn-int.com and sign our mutual non-disclosure agreement. You will receive a customer number, a username and a password, and then you can get started using <http://hn-int.flockman4u.com>

Dr. Anke Förster

The main advantages are

- ✓ The customer can easily collect and record data of his own flocks
- ✓ Single flock results are shown as graphs and tables, they compare performance with our target standards and provide useful management data
- ✓ A peer report ranks the customer's own flocks according to egg number / HH
- ✓ A worldwide database is built up which gives reliable information about the performance of our birds and makes calculations and analysis much easier
- ✓ The (anonymous!) comparison with similar flocks in the database (e. g. egg colour / climate / housing system) is a valuable and interesting evaluation
- ✓ With the input of additional information such as housing system, density, climate etc. even more reliable comparisons are possible
- ✓ The lighting program software for open houses has been implemented
- ✓ More H&N programs can be included if necessary
- ✓ Input and processing of financial data is in the pipeline



Fig. 1 – General Information

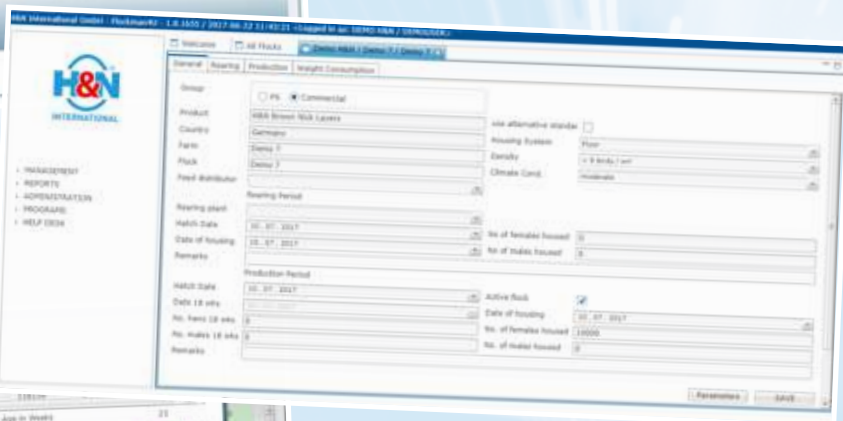


Fig. 2 – Input of data

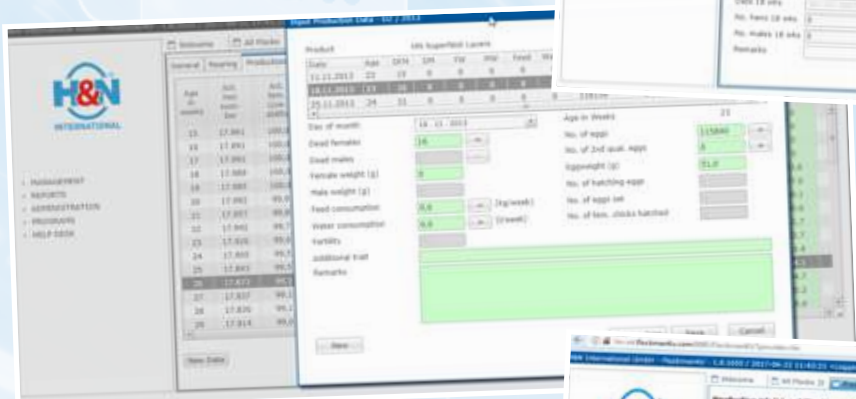


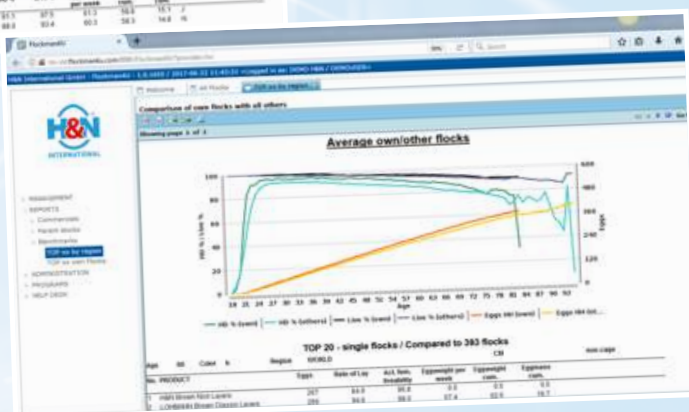
Fig. 3 – Diagram and table of performance



Fig. 4 – Peer report of own flocks



Fig. 5 – Peer report of whole database



LAYER LONGEVITY STARTS AT REARING

Nowadays layers have extended their laying period and we usually see longer periods of time with high productivity at the farm. The production period of a flock has shifted from just up to 72 weeks of age in the past to over 90 weeks currently. The longer longevity of laying hens requires an improvement of management, nutrition and health practices. There is no doubt that optimal management to assure a long production cycle starts at rearing. This article focuses on the main topics that should be taken into account during rearing to lay the right foundations to guarantee a long production cycle of the layers.

The link between longevity and rearing

The main objectives of rearing are to complete the process with a pullet that shows proper body development, adequate feed consumption combined with a well-developed digestive system and a good immune system.

When they start egg production, layer pullets must be equipped for an incredible challenge:

- Their nutrient demand increases very rapidly, since their egg mass production will grow very fast.
- They still have a substantial body

weight gain in the following weeks, as the sexual organs are developed.

- The medullary bone will start providing part of the Ca needed for egg shell formation.
- On top of that, the birds barely have enough feed intake due to a limited feed intake capacity.

This limited feed intake capacity triggers a reduction in the growth rate or even a loss of body weight during the start of egg production if the feed intake capacity has not been properly developed. If the feed intake is inadequate, production will drop after peak production (see graph 1)

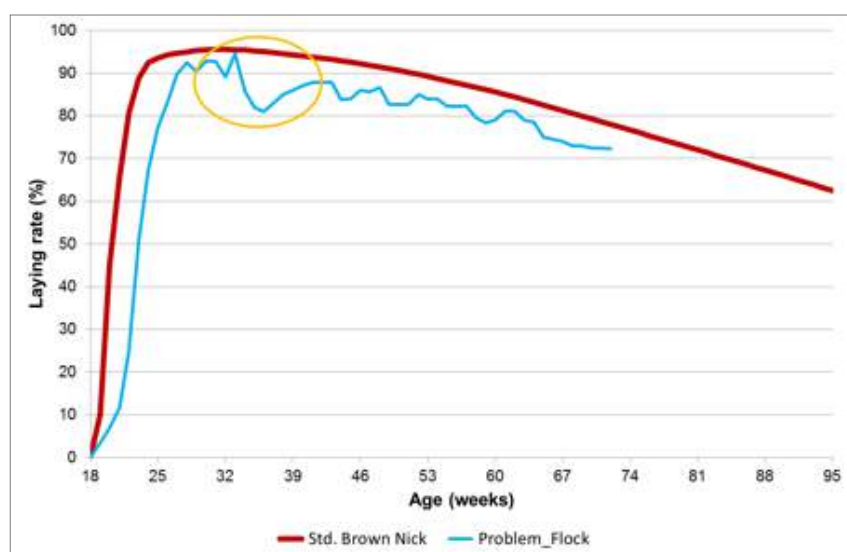
and health may be challenged due to this additional stress. As layer hens are extending their production time, this challenge at the start of production implies stress for the birds thus depleting their reserves for the future and consequently impacts negatively not only at this stage but also at the end of production.

Pullets' body development and longevity

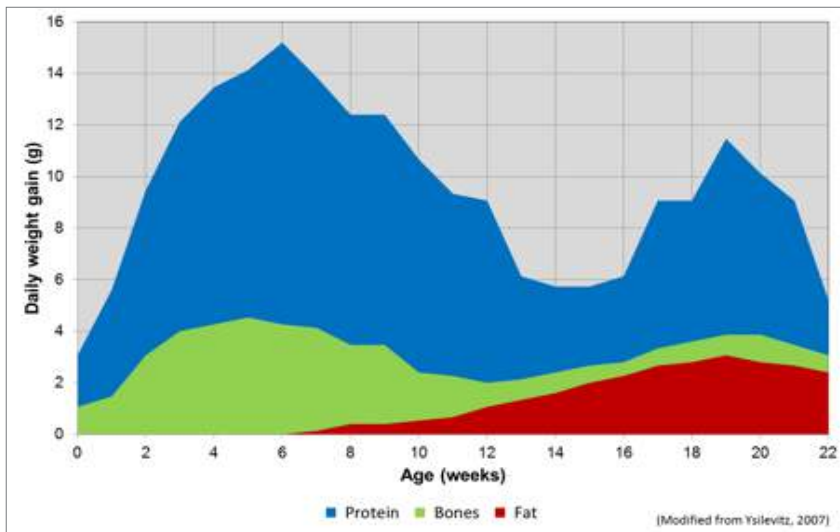
The body development of the pullet is one of the keys for a long-lasting layer. It is monitored by measuring the body weight across the weeks of life. We also can assess the extent of good skeletal development by evaluating the keel or tarsus length, however due to the variability of these measurements, body weight evaluation is enough to provide good information.

Pullet's tissue growth depends on the age, as we can see in graph 2. The main skeleton structure is built in the first 5-6 weeks of pullet life. Therefore, it is important to ensure the pullets are at target weight at this stage for optimum body development.

Up to 5-6 weeks of age there is peak of growth of muscle and bones forming the body structure of the pullet. Fat tissue starts growing around week 10 and growth of all the tissues peaks when the pullet reaches sexual maturity.



Graph 1: Production curve of a flock with low feed intake at the start of production.



Graph 2: Tissue development of the pullet.

Most of the nutrients that enable proper bone development in the pullet are found in fine feed particles. It is important that feed has a homogenous particle size, however nutrients like vitamins and minerals are found in the finest particle size. It is therefore important to “train” pullets to consume these particles on a daily basis. This training is about letting the pullets empty the feeder once per day at around noon so they can intake the fine particles that are so vital for bone development.

As the pullet grows, tissue development evolves: an underweight pullet during the first 9 weeks will have poor body development. Even if these birds, with underweight in the first weeks, achieve the target body weight during the last period of rearing, the type of tissue growth will be poor and undesirable (graph 2). This growth will only deposit fat, and the producer will be faced with the problems of



Picture 1: Pullet with a poor body composition and too much fat tissue due to compensatory growth after week 8.

prolapse and obese layers in the production period. An example of a badly developed hen with too much fat deposition is shown in picture 1.

Feed intake capacity development

The feed intake capacity is one of the targets hens must be trained in during rearing. We want to develop a bird with the highest feed intake capacity at the start of the lay to minimise the challenge of the high demands placed at the start of the laying period.

This management approach requires a developer feed: this feed will be given after week 9-10, once the pullets are at the target weight. This feed is a low density feed with high levels of fibre (see table 1 for details).

It is well documented that fibre is a “nutrient” that can expand the size of the digestive tissues in comparison with the body weight of the birds (see table 2). The combination of the intake of a high fibre feed with the intake of water creates a mechanical effect of expansion of the different organs of the gut. A good development of the gut using this kind of feed is crucial for the birds to deal with the challenges they face during production.

Table 1: Developer feed. Low density diet used in several developer feeds

Nutrient	Levels
ME	2,750
Protein	14.5
Total Lys	0.65
Dig Lys	0.53
Total Met	0.34
Dig Met	0.28
CF	5.5

Table 2: Effect of fibre in expansion of the gut organs.

g / Kg BW	Control	Fiber
Crop	4.5	6.8**
Proventriculum	2.63	3.03*

Source: Kondra et al, 1974

Summary

Genetic selection has helped to create layers with improved longevity and a higher persistency in egg production, implying longer production cycles. However, the great potential of the birds can only be expressed with adequate management and nutrition practices. Some of these practices start at rearing, stimulating good carcass development and the proper feed intake capacity. Be aware that any mistakes made in this period can rarely be solved during the production phase. Errors made here will compromise the performance of the birds throughout their lifespan. Little things, like having a good body weight at the first 6 week of age and ensuring sufficient feed intake at the start of production, can make a considerable difference in achieving the full genetic potential of today's layers. Preparing layers for a long productive life already starts during the rearing period.

Xavier Arbe

GENETIC POTENTIAL OF H&N BIRDS

The quality and productivity of H&N birds are guaranteed by our experience and success spanning more than 70 years in the layer breeding sector. We are highly committed to the general goal of supplying the increasing world population with a high quality source of protein by continuously improving the efficiency of laying hens.

H&N selects birds that perform better in all relevant economical and animal welfare traits. The main goal is to obtain higher production of saleable eggs per hen housed and to achieve this with the best feed efficiency so that production costs can be reduced. This is attained with longer production cycles and a higher laying rate, particularly at the end of the production period. Birds have a good liveability while maintaining an excellent persistency in eggshell quality until the end of the produc-

tion cycle and consume feed in accordance with their egg mass performance.

An important contribution towards achieving this goal is the extension of the performance testing period of the pure lines, i.e. until 102 weeks of age in one cycle, without any moulting. As seen in graph 1, where the production curve of the birds from one H&N white-egg pure line housed in individual cages is presented in comparison with the standard of the commercial layer NICK CHICK, the production level of these birds is extraordinary. This is exemplified by the production curve of the whole flock (PL-Flock) and is even more noticeable with the production curve of the group of the 25% best birds within this flock (PL-Best 25%).

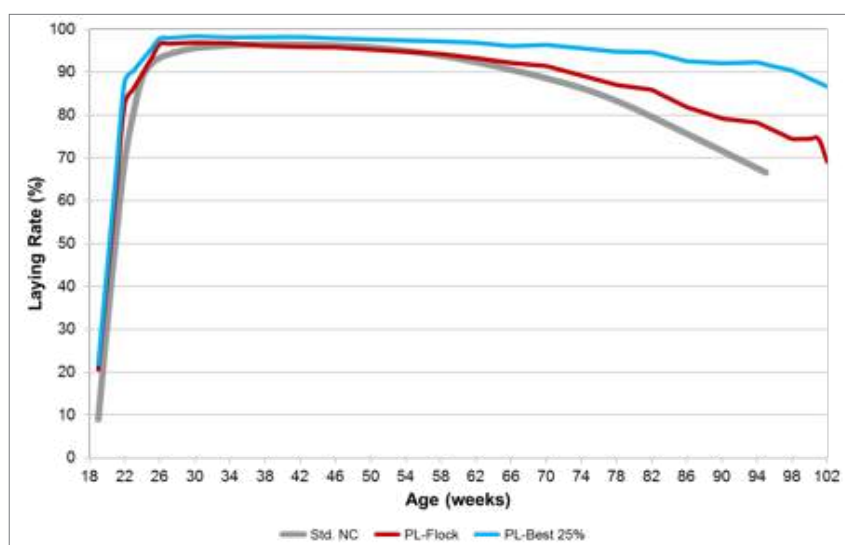
To observe the individual production performance of the birds in more detail, the histogram of laying rates of the individual

birds in the aforementioned flock is shown in graph 2 with an average laying rate of 87.5%. In this graph, the laying rate of the best 25% of birds of the flock until 102 weeks of the group, is remarkably above 93%.

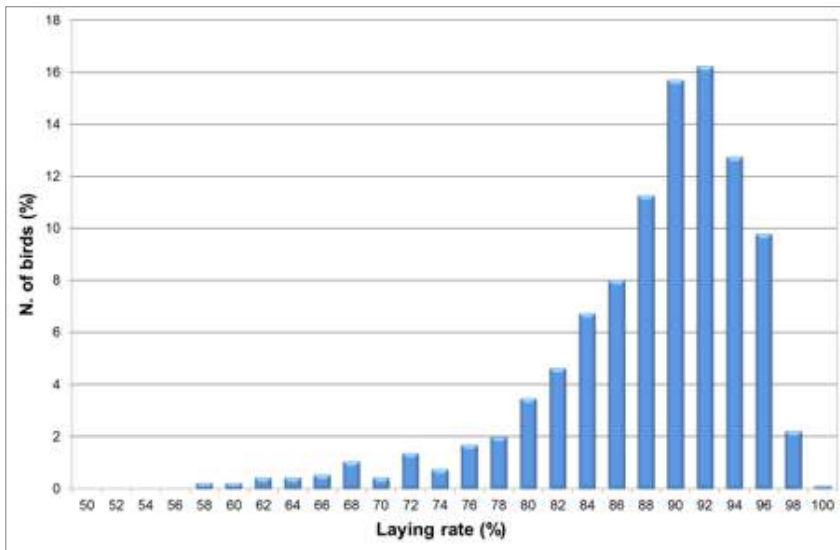
Furthermore, it is important that the birds achieve a good performance rate regardless of climate conditions, nutrition and management. Therefore, several field tests, in which the birds are confronted with the "real life" conditions, are being carried out in different locations worldwide to complement performance testing at the breeding farms. These birds are full and half sibs of the hens housed at the breeding farms and this field information is integrated into the selection process to guarantee the perfect adaptation and great performance of H&N birds worldwide.

Obviously, animal welfare traits are not forgotten. Special emphasis is placed on selecting birds with good behaviour, i.e. with no incidence of pecking and/or cannibalism and a good liveability rate. In achieving these aims, additional testing in group cages with four birds of the same family, is carried out at the breeding farm and combined with the information captured in the field tests mentioned above.

In order for the birds to express their complete genetic potential, they should consume nutrients in accordance with their egg mass output. With this in mind, the individual intake of feed for all of the birds is captured during the peak of egg mass (see details in photo 1). The goal is to guarantee adequate feed consumption during this



Graph 1: Production curve of an H&N white-egg pure line until 102 weeks of age.



Graph 2: Histogram of the laying rate of individual birds within an H&N white-egg pure line until 102 weeks of age.

period of maximum requirements for the bird. Efficiency is not achieved by reducing feed intake: this could cause problems for the bird if a nutrient deficiency in the feed is present or a stress situation should arise. On the contrary, the birds are intended to have appropriate feed consumption and based on this, they should be able to make the most of the resources and maximise the profitability of the egg producer by converting feed into money, generated by sales of the produced eggs. An adequate feed intake will allow more flexibility in the use of different raw materials, helping the nutritionist to optimise the feed formulation.

Last but not least, the eggs should arrive in a perfect condition until they are purchased by consumers, otherwise a satisfactory economical contribution will not be secured for the egg producer. Furthermore,

the eggshell serves as a physical barrier and should be strong enough to protect and guarantee the quality and hygiene of the product. However, the breaking strength of eggs deteriorates as the hens get older. Since layer breeding companies strive to prepare their layers to keep producing eggs for more than 90 weeks without moulting, the complete genetic potential of the birds can only be fully realised if these hens and flocks are able to maintain good eggshell quality until the end of the production cycle. Therefore, the economic impact of this trait is enormous and will be decisive for the longevity of the flock. Figure 3 shows the devices used to measure eggshell stability in the Genetic Department at H&N. This has been always one of the workhorses of H&N genetics and a characteristic that gives H&N a cutting edge compared with its competitors in the market.



Photo 2: Devices used to measure breaking strength (up) and dynamic stiffness (down).

To conclude, we can assert that genetic improvements obtained in the last decades will undoubtedly continue in the future. Moreover, it is expected that these improvements will be even greater due to the use of better measuring equipment, as well as the use of better statistical methods for data processing and analysis. Additionally, the routine implementation of genomic selection, which utilises the information of each bird's genome, has helped to increase selection accuracy - which involves an increase in the genetic improvement in each of the traits.

Dr. David Cavero Pintado



Photo 1: Individual feed intake collection in the breeding farm.



Imprint

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