

Poultry News

LOHMANN TIERZUCHT 1/2009

It's also in the hands of nutritionists:
Feeding has an enduring
influence on egg weight



Each country has an own preferred egg weight for the market. Breeders are attuned to this and offer different breeding products for different countries. The market, however, does not have a rigid structure as demands on egg weight can change rather quickly. So quick that layer breeders are able to react with new products.

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Remedy can be achieved on short notice by changes in the lighting programme, breeding management as well as changes in feeding. This is because, the higher the body weight of a hen capable of laying, the higher the egg weight throughout the laying period and vice versa.



LOHMANN ... Editorial

The year 2009 is a very special one in the history of Lohmann Tierzucht. Layer breeding and veterinary laboratory have been existing for 50 years now. Both events will be condigned with a special celebration.



2009 will also be an eventful year. Despite the difficult global economic conditions, our branch has proven to be very robust up to now, and further investments will be made. For example, our partner Pronavicola de Colombia has inaugurated a large hatchery in Venezuela, which has been operating with a full capacity from the very beginning.

Even at Lohmann Tierzucht itself many things are in motion. We are in the process of expanding our main fields of activity. Additionally to our project in Venezuela, we have also extended our co-operation contract with Hy-Line in North America by 4 years. Furthermore, with Huevos Fertiles, we now have a partner in the Caribbean region. In Cuxhaven, our new vaccine plant is on the brink of the GMP certification.

Last but not least, we have revised the Poultry News in order to meet the requirements of our customers. By doing so, we are making it clear that we are timely prepared for the everchanging conditions.

Yours
Dr. Hans-Friedrich Finck

Continued from page 1

Feeding has an enduring influence on egg weight

“The subject feeding is an ongoing subject in the field of egg production”, knows Robert Pottgüter, responsible for all matters concerning feed and nutrition at Lohmann Tierzucht. “Especially through feeding, producers can already control egg weight during the rearing period. International studies with different Lohmann breeds have proven this convincingly.” Conclusion: Lighter pullets lay relatively small eggs, heavier pullets, relatively bigger ones. This will not change even when nutrition has been changed to an optimum level during the production period. “Every egg producer and every nutritionist can control the weight of the eggs by means of special management and appropriate feeding”, according to Robert Pottgüter sharing his responsibility with his colleagues in the areas of production as well as the producers of mix feed. In order for layers to achieve their optimum efficiency in terms of egg weight and percental performance, feed must have the right nutrient density – i. e. the optimal composition of energy level,

crude protein, contents of amino acids and linoleic acid, vitamins and trace elements.

Oil and fat are ideal sources of energy

During this high performance period, many breeds show a slightly lower feed intake. Considering the preferential target of an optimum nutrient intake within this period, this deficiency needs to be later balanced out by a higher nutrient density.

This especially applies in the energy level of the feed. The energy level is an essential measurement for nutrient density and efficiency of the feed as energy, is the “fuel” for all high performance hens. Added fat and oil are optimum sources of energy as these are raw materials with the highest energy density which also have the best metabolic efficiency. Without high losses of energy in metabolism, they are used for the maintenance and production of egg mass. Moreover, their digestion

produces lesser metabolic heat as, e. g. the digestion of carbohydrates and protein.

Defining the energy level if required

“Therefore, it is an absolute must to offer feed with an optimum content of raw fat in times of higher environmental temperatures”, Pottgüter explains. In practice, however, it is not often so easy to determine the energy level of the feed exactly: “In nearly all leading egg producing countries, detailed and different systems of energy evaluation are being used”. This makes it difficult, or sometimes even impossible, to compare figures regarding energy levels.” Pottgüter therefore recommends to control composition and mixture of feed exactly and then determine the energy level of the different feeds by a comparative calculation.

Another possibility to compare the energy level of different feeds is a feed analysis. “Regrettably, this is not or only rarely done



in many countries as the energy level of a complete diet is not declared in some countries and one has to rely on the calculation and declaration of the feed producer”, Pottgüter says. “An aggravating factor is that the calculations can be different within the same country too.”

Linoleic acid increases egg weight considerably

Additionally, the content of linoleic acid has great influence as shown in the following table. The egg weight could be increased by nearly 2 grams at the beginning of the laying period. This was achieved only by raising the level of linoleic acid from 1.4 up to 2.4 per cent in the feed which was used.

Therefore, Lohmann Tierzucht conducts intensive researches together with other companies in developing a generally accepted pattern of amino acids for egg production. Basically, it is valid that a higher level of Methionine as well as Methionine and Cystine can influence the egg weight in a positive way”, Pottgüter says.

Aside from the use of oil and fat, the feed structure is of high importance when using mash feed. A homogenous structure is the basis for an optimum and uniform daily feed intake. The utilization of oil and fat is also very important as thereby the general acceptability of mash feed and the intake of fine ingredients in the feed is evidently



Quality control – a constant process at Lohmann Tierzucht

Drinking water is often a limiting factor

A balanced feed intake prevents eggs from being too small or having a large variance in egg weight. Clean drinking water is also one of the most important nutrients besides feed. Especially in high temperatures, the intake of water by the flocks can result in limited performance by the birds: hens which do not drink cannot eat, and hens which do not eat sufficiently, will not produce optimum egg weights.

“The subject of feeding is more complex than it seems at first glance”, Pottgüter declares. “The team of Lohmann Tierzucht is very experienced in this area and will gladly share it’s knowledge with egg producers.”

**Influence of linoleic acid in feed on egg weight:
LSL Classic – Tests by Lohmann Tierzucht**

Age (Weeks)	Content of linoleic acid				Difference per egg in g
	1,4%		2,4%		
	Laying performance in %	Egg weight in g	Laying performance in %	Egg weight in g	
20	15	40,8	13	42,5	+ 1,7
25	93	52,7	95	54,6	+ 1,9
30	93	58,0	94	59,7	+ 1,7
35	94	61,3	96	62,8	+ 1,5
40	95	62,1	96	63,8	+ 1,7
44	95	62,1	95	64,2	+ 2,1

Identical energy, protein and amino acid absorption – identical feed recipes, different only in the linoleic acid content

Other nutrients with influences on egg weight are crude protein and amino acids, especially the limited amino acid Methionine, as well as other amino acids like Lysine.

improved. Especially, fine ingredients have important contents such as vitamins and trace elements as well as the supplemented amino acids.



Lohmann hens are becoming more productive:

New performance standards have been defined

For the first time in the history of Lohmann Tierzucht, target figures of all Lohmann layers were increased simultaneously.



“Therewith the increased performance potential of our layers have been met”. For Prof. Dr. Rudolf Preisinger, Managing Director and Head of Genetics at Lohmann Tierzucht, the increase in the standard performance of all Lohmann hens is the result of consequent performance breeding and high output. These new standards are important guidelines for egg producers all over the world.

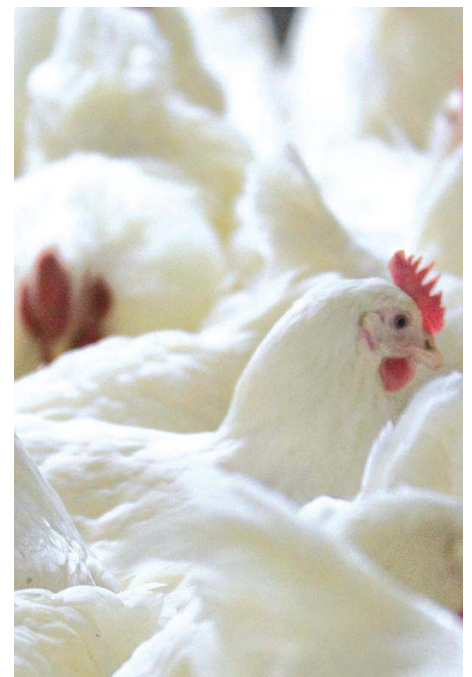
“We adapt the standard performance every 4 to 5 years. Since the last adaptation, we have achieved an improvement of 1 – 1.5 eggs per generation solely by genetic progress. Furthermore, additionally higher performance figures can be achieved in practice owing to improved conditions of management, feeding and husbandry”, Rudolf Preisinger explains.

Efficiency of hens is continuously being improved

The productivity of the hens improves especially after 50 weeks of age. That is the result of the high selection priority on the main breeding target: laying persistency

– i. e. the high laying performance in the last trimester of the production cycle. This improved persistency as well as the continuous improvement of egg quality – especially the shell resistance – lead to a higher number of saleable eggs and therefore, to a higher productivity of the flocks. Due to this improved persistency of the hens, it is possible to prolong the management period without moulting. The costs per pullet can therefore be spread over a longer period of time which will lead to lower costs per egg and thus, to another economic advantage for egg producers. An important breeding goal of Lohmann Tierzucht in general, is to improve the efficiency of our hens particularly by

increasing the laying performance. “Today our hens can produce a higher egg mass with the same amount of feed”, declares Dr. Matthias Schmutz, Geneticist at Lohmann



Tierzucht. "That can be ascribed to better feed conversion. The daily feed intake was therefore not genetically changed".

This balanced breeding strategy based on better feed conversion, led to a higher production performance with the same amount of feed consumption. The results of different tests show that Lohmann

even in well managed farms. This has already been taken into consideration in the new performance standards which are based on an average performance level. "We have defined our standards for cage as well as alternative systems in such a way that the production goal can still be achieved under ordinary management and environmental conditions." Preisinger

New international standards for cage management systems						
Origin	72 weeks			80 weeks		
	egg number H.H.	egg mass H.H. (kg)	cum. egg weight (g)	egg number H.H.	egg mass H.H. (kg)	cum. egg weight (g)
LSL Classic	318	19,86	62,5	359	22,58	62,9
LSL Lite	322	19,66	61,0	364	22,38	61,5
LB Classic	316	20,14	63,7	354	22,75	64,3
LB Lite	318	19,82	62,3	357	22,40	62,8

Standards for alternative management systems (floor, free range and aviary systems)						
Origin	72 weeks			80 weeks		
	egg number H.H.	egg mass H.H. (kg)	cum. egg weight (g)	egg number H.H.	egg mass H.H. (kg)	cum. egg weight (g)
LSL Classic	307	19,17	62,4	345	21,70	62,9
LB Classic	303	19,25	63,5	338	21,64	64,0
Tradition	295	19,25	65,3	328	21,57	65,7
Silver	300	18,58	61,9	336	20,98	62,4

breeds have a higher feed intake as compared to other breeds. "Lohmann hens normally produce the highest egg mass and are top in rank in terms of feed efficiency despite a slightly higher feed intake." Schmutz gets to the point: "The hens return the higher feed consumption with a high production of saleable eggs".

As the EU will ban conventional cage management from 2010 onwards, traditional cages, especially in Western and Northern Europe, will be replaced by floor management systems, aviaries and free-range systems. This permits a higher physical activity of the hen. Due to these forms of breeding, the results of these kinds of management systems are often poorer than the results of battery cages

emphasises: "We know that the genetic potential of our hens is much higher for all products. Better conditions contribute to better results."

Higher results in good conditions

The recently publicised new standards will endure in the coming years. Meanwhile, Lohmann Tierzucht is investing further in the genetic progress in order to achieve sustaining improvements for the most important economic characteristics such as laying performance and feed conversion. Other breeding goals are improved egg quality such as shell resistance and shell colour, as well as the continuing increase in vitality.



Lohmann Tierzucht receives the Axia-Award

Special Award for strategy organisation

Lohmann Tierzucht won the Axia-Award 2008 for medium-sized businesses. The prize, awarded by the renowned audit and consulting company, Deloitte, awards medium-sized businesses in North Germany for their successful and sustaining economic business management in four different categories. Lohmann Tierzucht received a special award for strategy organisation and the implementation of the same.

The jury stated that Lohmann Tierzucht had excelled in its core competence with especially successful and prominent development.

Role model for medium-sized businesses

The initial business area of the company was the breeding of laying hens and based on this, Lohmann extended its activities and now provides a wide portfolio as a market leader and international supplier of the egg as well as the vaccine industries.

More than 30 percent of eggs produced worldwide originate from Lohmann layers. Flock-specific vaccines for animals and the production of Specific Pathogen Free eggs for the manufacture of vaccines, are additional and significant areas of its business. The jury was convinced by the fact that a conspicuous competitive advantage was achieved by these strategies. Moreover, strategic instruments were used on a versatile and highly professional manner.

Good management practice secures competitive advantage

„We are honoured to receive this award. Our approach in creating new paths in the areas of layer breeding and its related areas, has been clearly confirmed“, said Dr. Hans-Friedrich Finck during the award presentation.

Lohmann Tierzucht has always had a clear focus in fulfilling the requirements of its customers worldwide. „With that, our company comes very close to the old Greek notion, AXIA“, according to Dr. Finck. „This stands for Value as well as for

Capability and Success and connects the central aspects of the work and challenges of medium-sized family businesses.“

Clear focus on customer requirements

The Managing Directors, Dr. Hans-Friedrich Finck and Prof. Dr. Rudolf Preisinger, accepted this special award on occasion of the grand event „Strategy – A success factor for a medium-sized business“, held at the Chamber of Commerce in Hamburg at the end of January.



Proud of the Axia-Award: Prof. Dr. Rudolf Preisinger and Dr. Hans-Friedrich Finck



Lohmann Tierzucht at the IPE in Atlanta

Egg industry despite the economic crisis

The egg industry has proven itself to be extraordinarily robust so far. This is the most significant result of the numerous discussions held at the IPE in Atlanta, Georgia (USA) this year. The current economic and financial crisis and their effects on the poultry business were the dominating subjects at the biggest trade fair on the American continent.



Lohmann's booth at the IPE in Atlanta

„All in all, we are contented with the exhibition“, declares Dr. Hans-Friedrich Finck, Managing Director of Lohmann Tierzucht. „The attendance met our expectations. We used the fair successfully to have intensive discussions with our customers and to target new customers. Above all, we are very

pleased that we are now also represented in the Caribbean region by our partner, Huevos Fértiles desde USA.“

The exhibition at the end of January where Lohmann Tierzucht had an own booth, offered excellent opportunities to meet customers from USA, Canada, Latin America and Asia.

The main topics of the technical discussions were the improved performance of LSL and LB as well as general management subjects.

Lohmann Tierzucht exhibits at the IPE every two years. The next time will be in January 2011.



Lohmann Tierzucht supports ShowCo recommendation

Fewer exhibitions – more attractiveness for visitors and exhibitors



„We support the ShowCo recommendation to attend the international fairs in Europe, Asia and USA at intervals of two

years“, said Dr. Hans-Friedrich Finck, Managing Director of Lohmann Tierzucht. „It must be the goal to arrange international exhibitions which are more efficient and at the same time, more attractive to visitors and exhibitors“. Finck, who is also member of the Board of Directors of ShowCo, considers this as one of the main tasks of the organisation.

ShowCo is an association made up of the leading companies in the poultry business who want to make their participation more effective at exhibitions. At the same time, ShowCo safeguards the interests of the member companies against the fair organisers.

ShowCo safeguards interests

Lohmann Tierzucht is one of the founding members of the ShowCo Association which is based in Padua, Italy.

The next international fairs which Lohmann Tierzucht will be attending are VIV Europe in Utrecht in April 2010 and IPE in January 2011.



Pronavicola de Colombia inaugurates the first franchise hatchery in Venezuela

35 per cent in market shares have been planned for 2009

Governor supports the project: "You will not be nationalised."

Grand train station in Calabozo, about a half hour flight time away from Caracas: The first Lohmann franchise hatchery in Venezuela is inaugurated. Among the guests were many important persons from the areas of economy and politics, top on the guest list was Governor William Lara. The new project of Pronavicola de Colombia, which has been the exclusive Lohmann representative in Colombia and Venezuela for more than 25 years now, is trend-setting the region and planning to achieve the market leadership in this South American country within a short period of time.

The project is also supported by the regional government. Governor William Lara states that agricultural projects can count on his undivided support. He emphasised: Although key industries and even private companies have been recently nationalised under president Hugo Chaves, Governor Lara pointed out in his introductory speech: "You can be sure that you will not be nationalised."

Pronavicola de Colombia exported about 4.5 million Lohmann Brown day-old chicks to its neighbouring country Venezuela during the past five years, despite



Inspecting the franchise farm: Rafael Serrano, Pronavicola S.A., Francisco Tata & son; shareholder at Pronavicola de Venezuela (l to r)

several delivery sanctions due to sanitary regulations as well as political and economic trade barriers.

from the capital Caracas and 22 kilometres away from the next city of Calabozo.

The parent stock farm has a capacity of 56,000 parent stock chicks, all Lohmann Brown Classic. The hatchery is equipped with Avida Chick Master incubators, with an annual capacity of 4.2 million female chicks.

The whole project is equipped with the latest technique and costs 9 million US



The heart of the franchise company in Venezuela: The hatchery

The project Pronavicola de Venezuela was founded in 2004

In order to be prepared for further interruptions of deliveries, the project Pronavicola in Venezuela was founded together with other Venezuelan layer hatcheries in 2004. The project started from scratch with the purchase of 1.5 hectares of wilderness located in an isolated region, a half hour flight time away

dollars. The company accommodates 20 single persons and eight families.

All farm sectors have a very efficient hygiene security system which divides the project in two different areas: a black and a white one in order to avoid cross contaminations. All units are connected by a thoroughly planned road system.

The first area serves as a corridor leading to the houses and apartments as well as

to the leisure area for the employees. It is – as the whole area is – completely fenced and, of course, under security surveillance. The hatchery which is placed in the second security area is about one kilometre away from the entrance.

Security is essential

The first production house is located 2.1 kilometres away. In total there are 4 units



Arrival in Calabozo, Venezuela: David Somoza, primary shareholder from Venezuela; Dr. Luciano Cousinet, Lohmann Tierzucht; Rafael Serrano, Pronavicola; Michael B. Seidel, Sales Director at Lohmann Tierzucht; Dr. Carlos Aranguren, Technical Services for Latin America; Fernando de los Rios, shareholder Pronavicola; Martha Tascon, shareholder Pronavicola; Rodrigo Lince, shareholder Pronavicola (from l – r)

within distances of 500 metres each with two houses. The rearing farm is nearing it's completion and another 2.3 kilometres away.

Additionally there is a composting unit, an emergency generator and a water treatment plant which covers the demand of water completely. Three different qualities of water are produced here: washing water, drinking water for humans and animals as well as specially prepared water for setters and hatchers. The annual production quantity of Pronavicola de Venezuela has already been sold.

Furthermore, about one million additional day-old chicks are being imported from Colombia in order to meet the high demand. The operative goal is to achieve a market share of 35 per cent by the end of 2009.

In line with the significance of this project, the official inauguration was celebrated on 10th January: 200 invited guests, all partners, the regional governor, other

government representatives as well as Dr. Luciano Cousinet, Area Sales Manager for Latin America at Lohmann Tierzucht and Michael Seidel, Sales Director at Lohmann Tierzucht.

The programme included a tour to the single units and a slide show of photos taken from the interior of the farms and hatcheries which were shown in the marquee.

Rafael Serrano, Managing Director of Pronavicola in Colombia and Venezuela, gave a review on the development of the

Venezuelan project and showed the development of the company and the market in Venezuela. Last but not least, he thanked the Somoza family, the principal Venezuelan partner and their employees for the excellent organisation of the inauguration.

Lohmann's Sales Director, Michael Seidel and Area Sales Manager Dr. Luciano Cousinet presented a commemorative plaque to Rafael Serrano, the representative of all partners and employees.

Successful co-operation with Hy-Line continues

The successful co-operation between Hy-Line North America and Lohmann Tierzucht continues. A contract in accordance with this extension was signed at the international poultry fair in Atlanta (IPE). Hy-Line North America is Lohmann's biggest parent stock customer and is responsible for the distribution of Lohmann layers (LSL Lite) in the USA for four years now.



*l. to r.:
Dr. Hans-Friedrich Finck, Managing Director Lohmann Tierzucht,
Pete Block, Managing Director Hy-Line North America,
M. B. Seidel, Sales Director Lohmann Tierzucht*



Studies prove:

LSL Layers are highly adapted to free-range management!

During 2009 the last German egg producers finally have to depart from cage management. The consequence: several egg producers have to abandon their farms, others will be able to position themselves in a better way. These are side effects of a changing market. Therefore, it is not a big surprise that some egg producers are still undecided whether investments in "enriched cages" will be honored by an appropriate demand. Others already focus on the production of free-range and organic eggs in order to benefit from the higher egg price.

Contrary to the conventional cage management systems, the "small group" as further development of enriched cages meets all demands of ethologists to meet the basic needs of layers: considerably more space (980 instead of 550 cm² per hen), nests, a scratch area for "sand bathing" and perches to rest on.

Many consumers still want to have the option to buy high quality eggs at a low

price. Egg producers have to focus on the income which can be realised with different management systems.

Model calculations have been published for all management systems, but one fact is often overlooked: Free-range production is only possible in small units and an adequate margin will be obtained only as long as demand exceeds supply.

Free-range management is more likely to be economically viable if the experience of successful producers is utilized. Results from a farm in Sweden demonstrate that the white-egg strain LSL is very adaptable to free-range conditions.

German Random Sample Tests show that the choice of the breed is also important for non-cage management. The following table shows the average results of 5 test years at Haus Düsse (cage) and Kitzingen (floor):

Distinctive differences between different systems are reflected in the average mortality rates, egg production and feed conversion in floor management



(Kitzingen) with and without beak trimming in comparison to conventional cage management (Haus Düsse).

Especially the different mortality rates due to cannibalism are very interesting as beak trimming of pullets is forbidden in the organic egg production.

LSL hens are especially popular

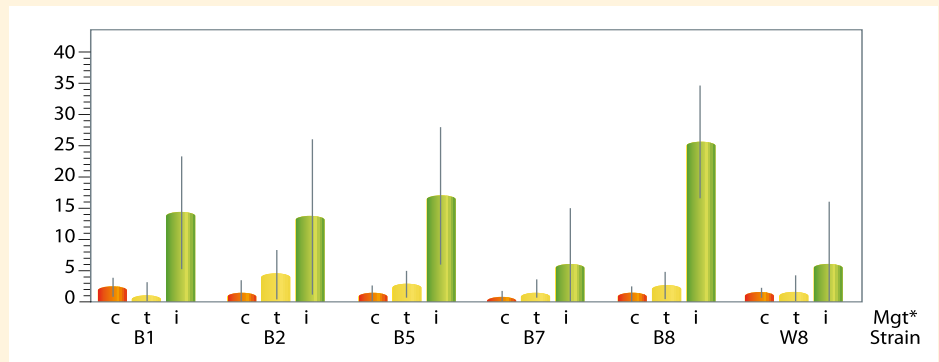
It has been known for a long time that the tendency to cannibalism varies between different breeds. Therefore, breeders have selected against this behaviour for many years, especially in case of brown layers. This is also important for layer management as there is the possibility to limit the production risk by choosing the right breed. Since beak trimming is not allowed in Sweden, LSL hens are particularly popular as they are little disposed to cannibalize.

Lars Norrman, long-time staff member of Verntofta and afterwards Gimranäs, has begun to produce organic eggs after more than 40 years of office and field work. He likes to share his experience in order to save other poultrymen from repeating unnecessary mistakes. His general advice for success: follow strictly the management recommendations of the breeder and learn from own observations every day. His successful poultry management is reflected in the performance data in figure 2.

Norrman recommends as a check list for the production of organic eggs:

- the management of layers must start from the day of hatch
- the rearing farm must have similar equipment as the laying unit
- transfer the pullets to the layer farm early enough
- the lighting programme must be adjusted to open houses

Losses due to cannibalism (%) in German Random Sample tests

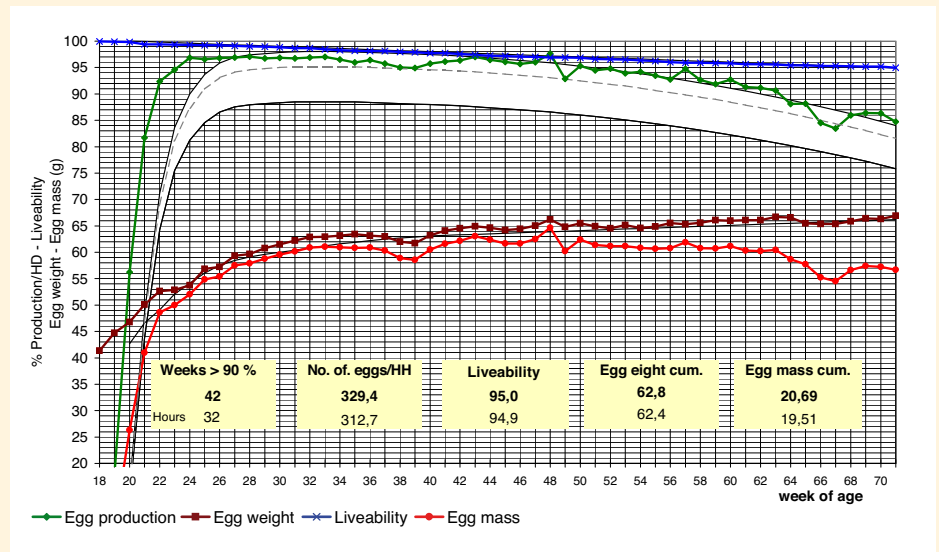


*Management: c = cage; t, i = floor; c, t = beaks trimmed; i = beaks untreated

Average mortality rate, laying performance and feed conversion in cage management (Haus Düsse) vs. Floor management (Kitzingen) with and without bread treatment (1999-2004)

Management system	% Mortality		Egg Number		Egg Wt.	Egg Mass	F. C. R.
	Cannib.	Other	H. H.	H. D.	g	kg/ H. H.	kg/kg
Cage, with beak trimming	1,4	5,1	307,7	315,8	64,4	19,82	2,08
Floor, with beak trimming	2,4	0,6	285,4	292,8	63,0	17,99	2,24
Floor, without beak trimming	14,0	0,5	266,2	288,9	63,4	16,87	2,36

Results of organic egg production in Sweden with LSL farm Lars Norrman, 2112 hens housed



- quality of litter and air must be optimised throughout the year
- daily control of the hens with eyes, nose and ears; if necessary use veterinary help
- keep accurate records and focus on utilization of the genetic potential
- learn from mistakes in a self-critical way and never make the same mistake twice.

Lars Norrman thinks that some males may contribute to calm behaviour of the flock.

He is definitely pleased that the males identify him as „boss“ and warn against strangers. Anyway, it is useful to know the genetic potential of the breed and to try to reach the best possible results with optimal management.

Reference:
Flock, D.K. (2008): Adaptability of laying hens to non-cage environments.
Lohmann Information 43 (2), 13-21.

GMP-certification runs at full speed in the new vaccine plant

At the beginning of 2009, Lohmann Tierzucht began production in the newly constructed vaccine plant for flock-specific vaccines in Cuxhaven.

Aside from the optimisation of the production process, another goal is to expand our production capacity. Considering that MUMS vaccines (Minor Use / Minor Species) should also be produced here in the near future, the production must be in accordance to the GMP guideline. This guideline describes in detail which structural and organisational measures have to be taken in order to assure a safe, successful and reproducible production of veterinary vaccines. Special attention will be paid on the exactly planned and documented quality management. Everything is running at full speed in order that the inspection can be completed successfully.

In the next issue of our Poultry News, we will report on the new vaccine plant in detail. The next Poultry News will be issued in mid June.



Other interesting articles include:

• **Review: 50 Years Veterinary Laboratory**

• **Increase of hatchability**

• **Customer portrait: Uzbekistan**

• **Appropriate husbandry of layers**

Events

17th – 19th May 2009
China Poultry Fair, Xian, China

15th – 18th September 2009
SPACE 2009, Rennes, France

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