03 | MARCH 2021

TETRA NEWSLETTER

PREFACE

TIME OF **CHANGES**

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TIME OF **CHANGES**

We are living in unprecedented times, but in the middle of the hardships of the pandemic situation, we shall not forget that the spring is a **HOPEFUL TIME WITH THE POSSIBILITY OF RENEWAL.** Despite the appearance of vaccines, we still have got a long way ahead of us and although protracted restrictions are placing more and more oppressive burden on us, we must realise how much we can learn from this.

GÁBOR SERES

All of us have improved in ways we never thought, and we came to appreciate the things we have. Cherishing our achievements, our connections and contacts is crucial as they are a stable foundation for our future plans.

We have all had to learn a lot: to keep distance, wear a mask, stay at home, give things up, meet online. We have also not only learnt to use but to utilize the benefits of technology.

Now, that everyone is staying behind their own windows can we really reflect on ourselves and the situation as a whole and see the bigger picture.

We have known for a long time, that global economies, although efficient, are vulnerable and the littlest of flaws could cause a serious problem. On the other hand, small groups are less efficient but are still very viable as local production cannot be given up.

Besides our scientific knowledge gets broader day by day, sometimes we still seem to forget Mother Nature has laws which need to be kept.

We have all experienced how fragile that nature can be, that we are part of. Once we reclaim our lost freedom, we will really appreciate each other's company, and every element of the nature surrounding us, including our birds and each egg produced.

We, at TETRA, not only hope, but believe that the world got smarter by 2021 and thanks to the past year, every single one of us will have a different point of view on what is ahead of us, its challenges and its opportunities.

GÁBOR SERES | Marketing Director

Photo: Ildikó Búza

ALGERIA: 50 YEARS OF MARKET PRESENCE


Shipment of day-old chicks (1975)

IN OUR EVER-CHANGING WORLD, maintaining a business relationship for several decades while adapting to new circumstances can be crucial. Our first export to Algeria was in the mid-70 and the country with its 44 million inhabitants has been an important export destination ever since. Its population has tripled since we were introduced to the market and seems to stay on an upwards trajectory.

SIMA SIPSA Exhibition, Algeria

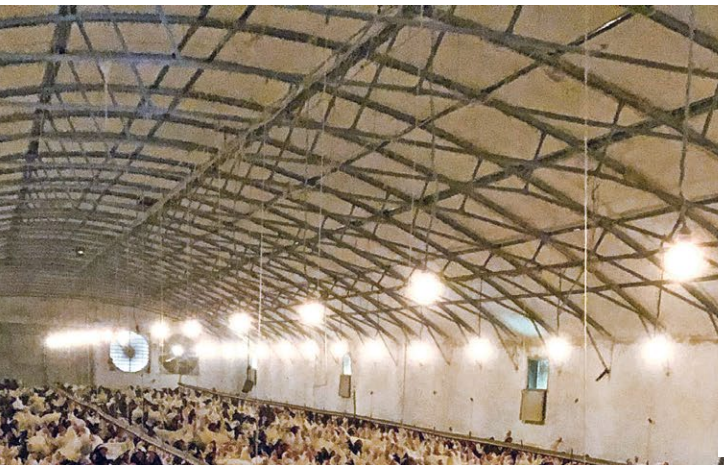
An extensive cooperation was established between the two countries in the 70s, thanks to which we exported day-old chicks, hatching eggs and pullets as well in large quantities, taking advantage of cheap air transportation of the time, using Malév aircraft. The shipments were accompanied by us, the employees of Bábolna TETRA Ltd., whose presence had a great contribution to the training of local professionals and to the development of the local branch.

Thanks to the decades of co-operation with large state-owned poultry breeder companies, TETRA's brown industrial layer has become well-known in the country. Its adaptation to local climatic conditions, resilience and outstanding production results made it market leader until 2010. A reputation based on the solid foundation helped us maintain our market position even in difficult times, against intensifying competition as satisfied egg producers were constantly searching for TETRA chicks in the market.


Parent stock

Air transportation (1975)


Hatchery




Parent stock transportation (2020)

As time went by, an ever-increasing demand emerged for keeping and breeding parent stocks in the private sectors. An establishment of new business relationships was necessary. The market-building and strengthening efforts of recent years have been proved successful and by today Bábolna TETRA Ltd. has a distribution network capable of fully covering the market.

We have established strong professional relations with our parent-stock keeping partners in the eastern, central and western regions of the country. We believe that with the transfer of knowledge, coordination and constant trade negotiations, we can not only further enhance the quality of day-old chick production but can confidently hope to regain our former market leadership as the commercial hybrid market seems to expect us to do so.

Algeria's strategic location from a commercial point of view, its development in the industry and of course its ever-growing power on the market encourages us to negotiate more intensely about coordination and cooperation. An important goal of ours is smoother deliveries of layer-hybrids through our Algerian distributors to the neighbouring African countries.

NIKOLETTA FEJK | Area Sales Manager, Africa

TETRA L SUPERB: A COMPETITIVE WHITE EGG LAYER FOR ALL MANAGEMENT SYSTEM

TETRA L SUPERB

From the very beginning, **WHITE EGG LAYER** have had a significant role in the history of poultry breeding in Bábolna. In 1969, as the forerunner of large-scale hybridization in Hungary, the breeding program of the TETRA L, a white-coloured layer, was launched, which aimed for caged, cost-effective production.

The selection work of geneticists in Bábolna with White Leghorn (WL) type birds put an emphasis on low feeding and housing costs, high egg production and low body weight. In Hungary, there was a low demand for this type of product, as the consumption was focused on brown eggs. The main indicators of TETRA L layer in 1977 were: average weight of 1750 g at the end of production, 270 eggs at 52 weeks of age, average feed consumption of 110-115 g, a mortality rate of 5-5.5% during rearing. Due to the consumption habits of Central and Eastern European countries which mainly consisted of brown eggs, export opportunities have narrowed, so in the second half of the 1970s Bábolna finished the breeding program of TETRA L. The company's capacity was used to develop the pure line birds of TETRA-SL, a brown egg layer, that was already popular worldwide at the time.

Following the privatization of Bábolna TETRA Ltd. in 2004, the owners stated their intention to revive the breeding of white egg layers to increase their presence in the white egg consuming countries of the world. An important milestone was the research and development process running from 2008 to 2012. By 2012, caged-keeping was scheduled to be banned, therefore this R&D process' aim was the development of a white layer from the existing nucleus flock which could provide high rate of production, low mortality, and a large number of salable eggs in alternative methods of keeping to their domestic and foreign partners. In addition, flocks can be efficiently kept for up to 90 weeks, depending on market needs. An annual data collection was carried out on nearly 10,000 hens at an experimental farm as a part of a joint research program with the University of Kaposvár, as well as at the company's own crossbreeding test bases. A new pedigree farm, built in 2011, with a capacity of more than 20,000 was also included in this.

The egg production results shown in Figure 1 reflect the initial state between 2010 and 2012.

Thanks to state-of-the-art data collection protocols and genetic methods, as well as breeding value estimator statistical programs, the genetic group has achieved significant improvements in their white egg layer performance in a few years.

In Figure 2, the number of crosses show that the genetic group has gone on several trails in hybrid development to enter the world market with the best combination. The figure shows the results of the random crossed offspring test performed between 2016 and 2018, similar to the previous figure, at the age of 67 weeks. In 6 years (6 generations), a significant increase was achieved in total egg production per number of hen housed. Mortality was successfully reduced during rearing and production. Also, the gradual and consistent improvement of quality characteristics has led to an increased number of salable eggs.

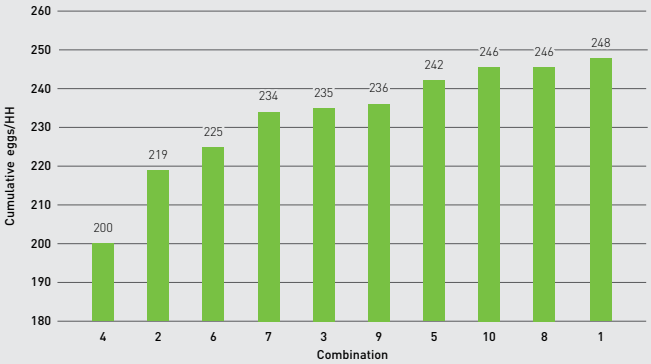


Figure 1: *TETRA L SUPERB random cross test results (67th week of age - 2010/2012)*

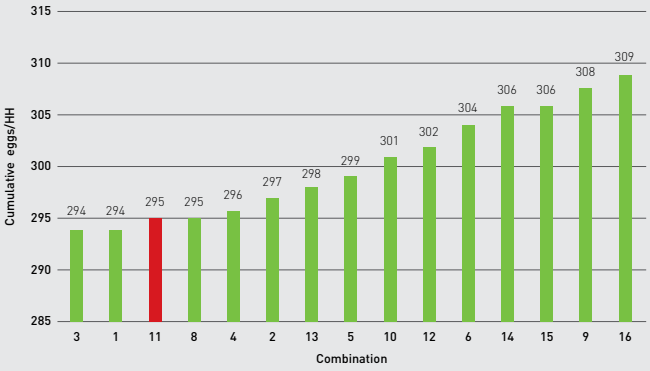


Figure 2: *TETRA L SUPERB random cross test results (67th week of age - 2016/2018)*

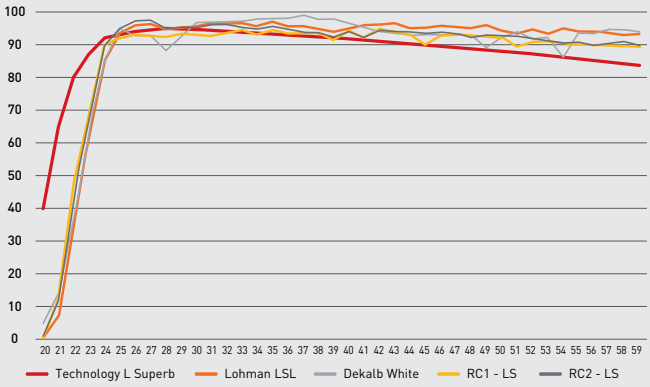


Figure 3: *TETRA L SUPERB in-house performance test 2020/2021*

The selection work over the last 12 years has followed the current and expected market trends, resulting in a white, TETRA layer that is robust, has good persistence, excellent egg quality, low mortality rate and can be kept in a more cost-effective way than brown layers due to lower feed consumption and FCR. It also holds its place in alternative systems, with optimal management without debeaking.

The TETRA L SUPERB, which is available on the market today, produces 410 eggs for 90 weeks at a daily feed intake of 110 g / hen, which makes it undeniably competitive against any white layers in the world. ■

DR. ANITA ALMÁSI, PHD | R&D Analyst

PERIPHERAL NEUROPATHY SYNDROME IN LAYER PULLETS

LEG STRETCHED FORWARD WHILST THE OTHER BACK OR ONE SIDEWAYS, curved toes, hobbling, or in more severe cases disabled movement; behind the symptoms that remind one of the change in movement system caused by the neural form of Marek's disease (MD), seen in adult birds described in textbooks, often stand peripheral neuropathy (PN) syndrome in young layer pullets. In order to differentiate between the two diseases, we need to consider the age, examine the post-mortem and histopathological lesions of birds plus employ molecular biological methods. The causes of the disease vary and according to modern science, prevention and treatment possibilities are limited.

Photos: Dr. Előd Bajcsy

The lesion appears to be leg weakness and occurs to layer pullets. It produces symptoms that are similar to those caused by lesions of the peripheral nerves in case of Marek's disease. The first signs can be seen from the age of 4-5 weeks in both cage and alternative growing systems. The syndrome was first described in an SPF Rhode Island Red flock by *Biggs, P.M. et al., 1982* and was identified as peripheral neuropathy syndrome. *Bacon, L.D. et al.,* 2001 established the diagnostic criteria for the disease. Hungarian cases were first presented by *Kőrösi, L. in 2017* and in *2018* at the Derzsy Days poultry conference.

PN is an illness of the peripheral nervous system of poultry and blocks neuro-impulse transmission between the central and peripheral nerves, and worsens muscular activity significantly. Symptoms are caused by the damage of the motor, the sensory and the autonomic nerves and may manifest in both chronic and acute forms. It is usually damaged motor neurons that are responsible for muscle weakness, therefore birds find it difficult to move, reach feeders and drinkers and are unable to use perches, slatted floor or aviary systems. Sensory neuron dysfunction results in abnormal sensation and thus in uncoordinated movement. If the autonomic nerves do not work properly, it can lead to organ failure.

The causes for peripheral neuropathy stay hidden in many cases. PN may originate from:

- physical injuries, traumas
- diseases or disease-related inflammations
- viral or bacterial infections
- toxic materials *(www.poultrydvm.com).*

Autoimmune diseases reported after vaccination can also develop peripheral neuropathy *(Massi, P. et al., 2003).*

THE ILLNESS OF THE PERIPHERAL NERVOUS SYSTEM OF POULTRY BLOCKS NEURO-IMPULSE TRANSMISSION BETWEEN THE CENTRAL AND PERIPHERAL NERVES, AND WORSENS MUSCULAR ACTIVITY SIGNIFICANTLY.

The symptoms can be produced from a few birds to 10% of the flock. In case of minor symptoms, birds show active interest, and apart from the weakness of one or both legs no pathological changes can be seen. Later, due to leg weakness, abnormal leg position, crooked toes, reluctant and later disabled movement, birds do not reach water and feed. As a consequence of dehydration and starvation, they are either culled or die. Those that present minor symptoms may recover. That can be assisted by isolation and special care. Symptoms can persist for 6-7 weeks *(Chudasama, K.B. et al., 2017).* In the meantime, the rest of the flock seems healthy and develops properly. No inflammation, injury, swelling, joint lesion can be observed on the legs of affected birds.

Peripheral nerve thickening is a typical pathological evidence of both PN and Marek's disease *(Witter, R.L. et al., 1995).* Histopathological examinations can differentiate between the two diseases. In case of PN you can find focal inflamed damages in peripheral nerves. Nerves show type B lesions, demyelination, oedema, plasma cells are visible. There are no lymphomas in visceral organs *(Kőrösi, L., 2017).*

In case of Marek's disease, type A lesions and lymphomas are dominating *(Horváth-Papp, I., 2019).* Growing chickens do not show brain and spinal cord lesions in case of PN, however when birds are infected by Marek's disease virus (MDV) you can find lymphocytes' encephalomyelitis and peripheral nerve inflammation. There are no tumours in case of PN, however such lesions are pathognomonic for Marek's disease. Paralysis in adult birds caused by Marek's disease produces similar symptoms (i.e. histological damages in peripheral nerves) as in case of PN, but the age of birds helps to distinguish between the two diseases *(Thuma, Á. et al., 2018).*

Real-time PCR tests are also available to rule out oncogenic Marek's disease virus. At the age of 5-8 weeks,

Varying degrees of thickening of the sciatic nerve (n. ischiadicus).

Varying degrees of thickening of the sciatic nerve (n. ischiadicus).

if layer pullets show peripheral nerve thickening, oedema, plasma cell infiltration and if not many Marek's disease viruses and tumorous lesions are found, there is a strong possibility for having PN. Peripheral neuropathy is an autoimmune disease that is often misdiagnosed as Marek's disease and is treated unsuccessfully with further vaccinations. However, in this case the MD vaccine over-stimulates the immune system and clinical signs worsen *(Gall, S. et al., 2018).*

As we see, the disease is more likely to spread in areas where older birds are kept nearby or at farms where the former flock was affected and houses were not disinfected thoroughly enough before the new stock arrived.

We have good experience in treatments with vitamin B complex for prevention or for cases when birds show minor symptoms. Thorough cleansing and disinfection must be done before the arrival of day-old chicks. Make sure that older growing stocks or birds after 1st egg are not kept nearby.

Based on our experience, peripheral neuropathy disappears by the end of the growing period, layer birds recover and produce according to standards under appropriate conditions. ■

DR. ELŐD BAJCSY | Veterinary Expert on Poultry Medicine

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OUR ONE-MINUTE NEWS
from the last three months

DECEMBER 3, 2020

Portfolio Agricultural Awards were assigned at the Agricultural Sector 2020 Conference this year again where Bábolna TETRA Kft. has been awarded with the title of honor "The breeder of the year in 2020". Szabolcs Németh Commercial Director accepted the award.

We offer our heartfelt thanks to the Team of Bábolna TETRA Ltd. for their contribution to this outstanding performance.

Portfolio Agricultural Award

JANUARY 4, 2021

January 4th, Monday - The first TETRA breeder day-old chicken shipment of 2021 launched to South-Korea

Shipment to South-Korea

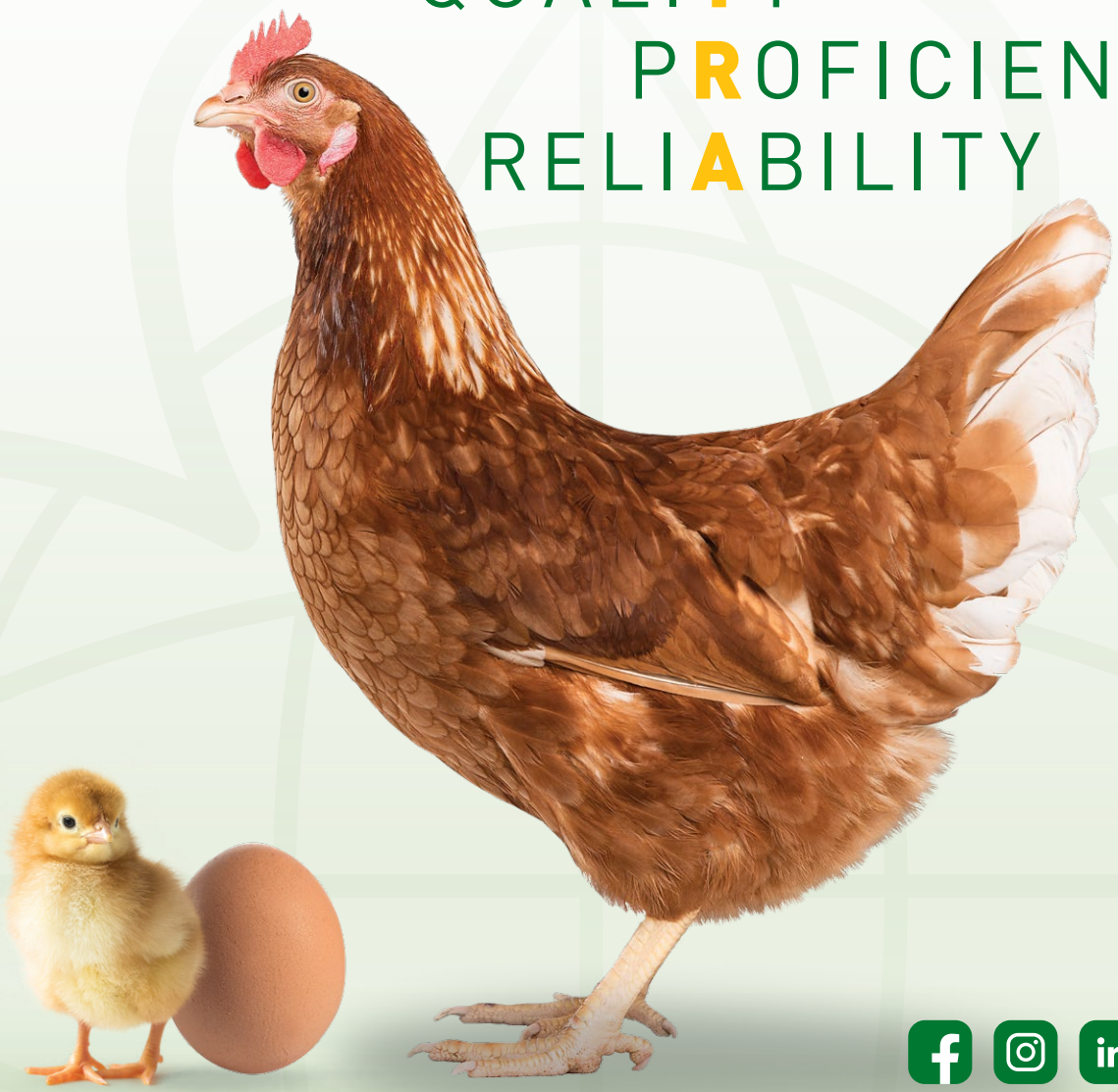
JANUARY 29, 2021

Our colleagues are infinitely grateful to our medical workers for their efforts to handle the pandemic. We trust, that with our donation of coveralls to Petz Aladár Hospital in Győr and Markusovszky Hospital in Szombathely, we can help them working in higher safety and we can contribute to the earliest possible recovery of many people.

Markusovszky Hospital

TETRA
SELECTED FOR QUALITY

TRADITION
RESEARCH
QUALITY
PROFICIENCY
RELIABILITY



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