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Photo: János Varga

CREATIVE RESPONSES TO THE NEW CHALLENGES

AFTER A LONG-CONTINUED PANDEMIC PERIOD, we are shortly seeing the promising light at the end of the tunnel, however instead of feeling relieved, as a business organisation, exporter and poultry breeder, we have to face new challenges.


SZABOLCS NÉMETH

This is because the global epidemic will not pass traceless. In parallel with the stabilization of the health situation, the extraordinary operating system of the last one and half year, which has never been felt before, makes its impact more and more. We believe that our solidarity with our partners, their loyalty, and the creative solutions we have developed through our close cooperation will help us all to cope with the current difficulties and to develop together in the future.

The decision system of business, based mainly on material arguments, was less and less able to provide reassuring solutions to market operators in the economic situation upset by the pandemic. Close co-operations and solidarity between business partners were appreciated, which was able to help the struggling party to turn the corner. The business philosophy of Bábolna TETRA always focused on personalized service, a trade policy which considers the specifics of different markets and long-term cooperation based on mutual trust. Perhaps this is the reason why we were able to deliver without major interruptions during this extraordinary period, and we were able to ensure the maintenance of the food value chain of each market through our customers and distributors.

We can now clearly see the more serious consequences of the extraordinary market situations, the deficiency, the increasing prices, the risk of the impossibility of farming. The most visible sign of this in our profession is the unprecedented increase of feed prices, the difficult availability of feed ingredients, which has plunged many livestock farmers into a disquieting situation. Such crises always have the potential for development and change, and coercion may produce well utilized and more sustainable solutions in long term.

During our research and development activities, we constantly monitor the new challenges of our changing world and strive to provide appropriate responses to them. We pay serious attention to the changing expectations of consumer markets in our selection work. In more developed markets, there is a strong demand for diversification and product expansion, but we also need to respond to global challenges. There is an increasing demand for hybrids that are more tolerant of the extremity of climate change, have more efficient feed sales, and have good production results under sustainable production conditions.

Thanks to the pandemic, it has become known to a wide range of people how an insidious disease can spread, the importance of complying with strict hygiene rules if we want to stop further spread. We hope that, as a side effect, our biosafety recommendations will also be unquestionable for poultry farms. This may also help in the fight against avian flu, which is causing significant economic damage worldwide.

Through the pages of this newsletter, by involving our experts and external consultants, we would also like to help you find creative, long-term solutions to the challenges, which also have the potential for future development. ■

SZABOLCS NÉMETH | Commercial Director

SUSTAINABLE MARKET DEVELOPMENT ON THE AMERICAN CONTINENT FOR 10 YEARS

MR. BASTIAAN SCHIMMEL, THE MANAGING DIRECTOR OF TETRA AMERICANA* shared his thoughts about the start of cooperation with TETRA, the business progress so far, and their future plans. Due to the well-developed commercial and professional activities between the two companies, TETRA is building a solid market position in the US and is also present in many Central and South American countries.

Mr. Bastiaan Schimmel, the Managing Director of Tetra Americana

'We started our cooperation with Bábolna TETRA in 2009, when our family company, Centurion Poultry (CPI**), was actively diversifying our portfolio of products to offer more variety to our clients in the United States (US) and Latin America,' Bastiaan says.

He became familiar with TETRA when he worked as area manager for the Dutch feed producer De Heus Animal Nutrition. It was the long and respected history of the TETRA breeding program that raised his interest. Later, at CPI he and his team realized, there should be more competition in their market. 'There are too few varieties dominating too large part of the market. We felt that producers should have more choices,' Bastiaan states.

They started to work with the two well-known and established parent stock breeds, TETRA Brown (Bábolna TETRA-SL) and Bábolna Harco as both hybrids have had a long history of use throughout the world. 'Over time, TETRA Brown has proven to be a competitive layer for the brown egg segment in the US,' Bastiaan affirms.

He says, that with their added focus on Latin America their intention was to capture brand recognition in certain key markets which had worked with the Bábolna Harco many years prior. 'Unfortunately, due to significant shifts in markets, the Black Sexlink type hybrid was becoming less popular than it had been in years past. Today we focus on TETRA Brown for the American market. Very recently we also started to test the market for TETRA White (TETRA L SUPERB),' he adds.

Regarding their current activities, millions of TETRA chicks placed annually are originating from their facilities and is confident to see a positive increase with the latest

Export delivery

MILLIONS OF TETRA CHICKS *PLACED ANNUALLY ARE ORIGINATING FROM THEIR FACILITIES*

improved genetics. Though, their main business is still primarily focused on the TETRA Brown product, they have expanded to include the TETRA Amber and TETRA White products as well. 'Although TETRA Brown has its place in the brown egg market, the white egg market is significantly larger in the US. Having recently started to test TETRA White, our current focus is establishing a good foundation for future growth with TETRA White. As in many other mature markets, the United States egg market is becoming more diversified, bringing challenges to serve the many variety of needs,' he explains. At the same time he hopes it will create opportunities for making inroads with TETRA.

'Our main export markets tend to be geographically closer to our facilities in Southeastern US going to Central America and the Caribbean and to some extent also South America. We are hopeful with the introduction of TETRA White there will be more opportunities to further expand our exports and presence abroad, as some of the larger markets in Latin America, but also Canada, are primarily white egg markets,' he adds.

'Having worked more than 10 years with Bábolna TETRA, we have seen continued improvement in product performance and breeding to address market needs. Resilience of the products to adapt to these ever-changing needs has helped us continue to offer a competitive product for the various market segments.' He pointed out that like many other competitive markets, US producers are very much driven by results.

After 30 years serving American egg producers, CPI** has developed a reputation for supplying excellent chick quality and service to their clients. When it comes to TETRA, he further expands by saying 'Our customers value TETRA due to its good livability and cage-free qualities such as feathering and temperament. TETRA Brown has proven to have a particularly good egg-size profile for our market, coming into egg size quickly and able to maintain optimal egg size throughout the lay cycle, this has been positive across different production systems and various retail markets.'

He adds that the US is a highly competitive market, with breeds that have a long history and name recognition and it is certainly a tough challenge to bring a new breed onto the market. Since its introduction, Bábolna TETRA has built a good name, has shown to be competitive and continues to solidify its position in the market. Bastiaan is hopeful for opportunities to making inroads with the introduction of TETRA White and to strengthening the TETRA brand in the years to come.

He admits that COVID-19 has certainly caused a great deal of turmoil on the American continent and that included their business as well. He believes that they have been relatively lucky however, in that after implementation of strict mitigation guidelines throughout their operations, they have had relatively few incidences which did not significantly affect their ability to keep their operations up and running.

'COVID-19 appears to have had a positive impact on the demand of day-old chicks in general, while there was a negative impact on restaurant and food industry demand for eggs, the demand for shell (retail) eggs appears to have remained strong, particularly for the brown egg market that has been positive,' he says. He expects a shift back to higher demand for liquid eggs toward the food industry, which likely will reduce the demand for shell eggs to some extent. He is hopeful that will not affect their business on the balance, however, and now that vaccines are readily available, he is hopeful that everyone finds some sense of normalcy again.

**Tetra Americana LLC, a wholly owned subsidiary of Centurion Poultry, Inc. (CPI) was founded in 2005. Tetra Americana is the Franchise holder for the American Continent of TETRA® branded egg layers.*

***Centurion Poultry, Inc. (CPI)*

NIKOLETTA FEJK | Area Sales Manager

Grandparent stock

TETRA TINT

The cream-coloured-egg layer, TETRA TINT is tailored to changing climatic and sustainable production conditions.

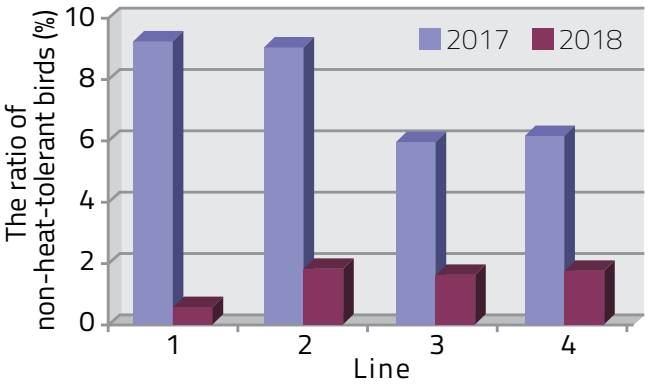
There are two major parts of the world egg market; white eggs account for approximately half of it and different shades of brown for the rest. White eggs are produced by the lightweight Leghorn type layers, whereas the birds laying brown eggs are commonly referred to as Rhode Island hybrids.

The preference and judgement of consumers regarding the uniformity, colour, and shade of eggshells can widely differ by country and even within a country. They are formed by the market demand, the preconceptions about eggshell, the religious and social customs, the information related to shell colour and poultry management (i.e. bio or organic), plus other beliefs like how shell colour affects the nutritional value of the egg. It seems, however, that Europe is facing changing trends as well. On this formerly conventional brown and white egg market, there is a growing demand for a greater variety, so 'tinted eggs' like cream-coloured, blue, green, or dark brown ones have become popular in recent decades. The origin of cream-coloured-eggs is as follows: by cross-breeding White Leghorn and Rhode Island chickens, the offspring produce pleasant-looking beige-coloured eggs.

To meet market demands, Bábolna TETRA Ltd. launched a joint R&D programme with the Hungarian University of Agriculture and Life Sciences (MATE) Kaposvár Campus that resulted in the breeding of the Hungarian TETRA TINT layer hybrid. Over the years, there have been several experimental breeds tested simultaneously under various management conditions. The egg quality was checked by measuring instruments, body composition was assessed by computerized tomography scan (CT), the layer behaviour was monitored by cameras, and the plumage condition was evaluated. All these enabled researchers to select the best breeding lines for the R&D programme. The breeding of this new layer hybrid not only meets market demands but also responds to climate change, one of the greatest challenges of the 21st century. By measuring temperature and humidity at the TETRA pedigree and progeny test farms for years and comparing the data with individual performance (production, liveability and egg quality), researchers could select the most persistently heat-tolerant types and families and introduce them into the selection programme. In the meantime, they kept focusing on the main priorities, i.e. high performance and outstanding liveability. The new hybrid is white-feathered, it has fine bones, a lighter body weight, a better feed conversion, and most of all it is more tolerant to high environmental temperature compared to the two basic (White Leghorn and Rhode Island) strains.

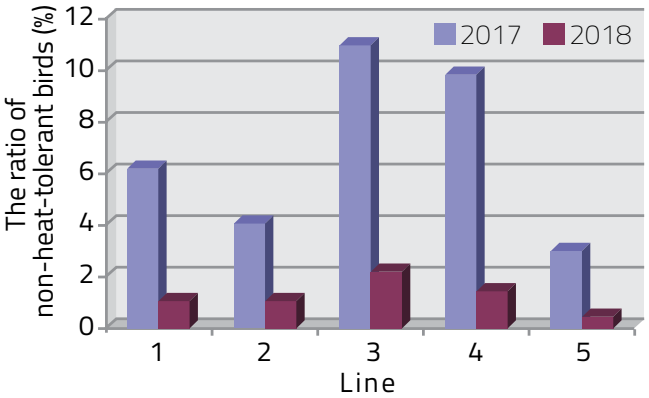
The research team achieved remarkable results regarding the ratio of heat-tolerant to non-heat tolerant birds during the first two years of the project. Graphs 1 and 2 show how the ratio of heat-tolerant birds of the next pedigree generation changed after the exclusion of non-heat-tolerant pure line birds (Rhode Island and White Leghorn) from the breeding programme in 2017. As a result of the selection, the number of non-heat-tolerant birds of every pure line has decreased considerably.

*Change in the ratio of non-heat-tolerant **Rhode Island** pure lines in 2017 and 2018*



***Graph 1.** Rhode Island lines heat tolerance test results*

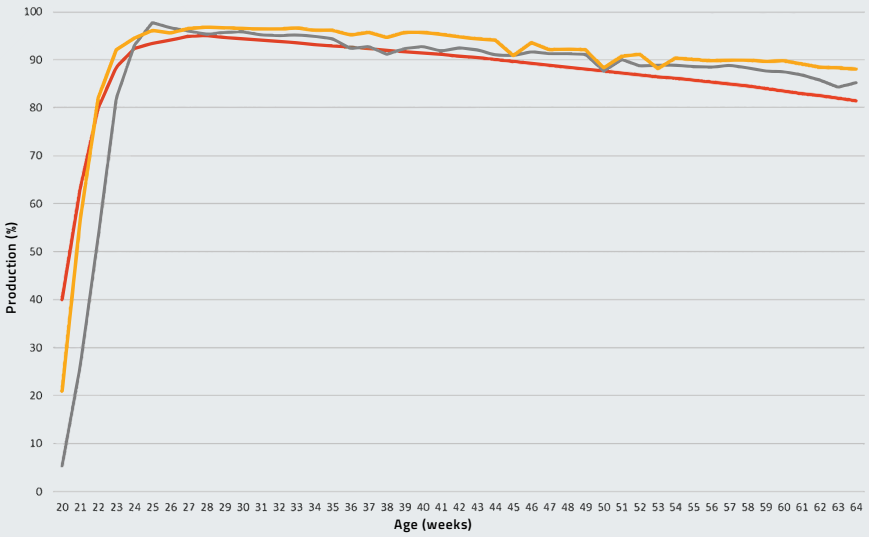
*Change in the ratio of non-heat-tolerant **White Leghorn** pure lines in 2017 and 2018*



***Graph 2.** White Leghorn lines heat tolerance test results*

At present, according to the results of the crossbreeding tests done at the Bábolna TETRA progeny farm, the best birds are selected from the basic lines to breed a new hybrid. The group of geneticists could improve both heat tolerance and production indicators of the birds in the past years. (See Graph 3)

Production of TETRA TINT cross-breeds RC progeny test 2019B *2020/2021*
Age: week 64



Graph 3. *TETRA TINT in-house performance test (2020/21)*

**Data is only available till 64 weeks of age as TETRA TINT test flocks are still producing at the article publication date.*

Thanks to the outcome of the complex selection work, Bábolna TETRA Poultry Breeding Ltd. can widen its product range by introducing TETRA TINT on the market in 2021. This new layer hybrid can perform extremely well under changing climatic and sustainable conditions, in the cage, alternative, and organic production systems alike, and has high liveability.

DR. ANITA ALMÁSI, PHD | R&D Analyst

DR. ELŐD BAJCSY | Veterinary Expert on Poultry Medicine

HOW TO MAKE HIGH QUALITY POULTRY FEED **AT MORE REASONABLE COSTS?**

Surely, the above title sparks great interest among livestock producers these days as **THEY ARE DEEPLY CONCERNED ABOUT THE TOPIC BESIDES THEIR HEALTH AND THAT OF THEIR FAMILY.** Unfortunately, we are not magicians either, as feed ingredient prices have risen at an unprecedented rate, but we have a few suggestions for making livestock production cheaper. When compiling the quality and the quantity of feed mix nutrients, the age and the production purpose of the animals are always taken into consideration to optimise production and maximise profit.

1. FEED INGREDIENTS

First, a cost-effective substitute for the traditional **corn-soybean-based** feed needs to be looked at. The usage of ingredients is determined by their availability, price, and quality. Continuous monitoring of the nutritional value and feed quality are key requirements.


triticale

Wheat is mixed into poultry feed instead of corn in many cases. The advantages of this cereal are the higher protein value and the better quality granule production facilitation. Among the disadvantages is the large NSP (non-starch polysaccharides) content, therefore, xylanase enzyme is required when adding wheat to feed in a larger proportion. It has no pigmentation effect, so if producers insist on the original yolk and skin colour, they should apply more pigment feed additive in the premix. We often produce feed with minimum corn content or even no corn mixes for our Russian or Uzbek customers.

Feeding rye is not widely grown and its application in the feed is recommended in a proportion of a maximum of 5-10% for elder birds.

Sometimes we come across **triticale** - a hybrid of wheat (Triticum) and rye (Secale) - in the feed. Since its


rye

crude protein content is similar to that of wheat, xylanase enzyme is required when adding triticale in a larger proportion. Furthermore, farmers should be aware of the fact that it could be contaminated with ergot (Claviceps purpurea).

Barley is not used in broiler feed as it has a low energy content. However, it may be mixed into other types of poultry feed together with the β-glucanase NSP enzyme.


wheat

Having an outstanding drought tolerance, **grain sorghum** recently has become an excellent alternative to corn in areas hit by severe dry weather conditions in Hungary also. Corn can be replaced with low-tannin content (less than 1%) grain sorghum varieties in poultry feed at a rate of 20-50% depending on the age group of birds. 15-30% grain sorghum can be added to feed without a drop in the production of poultry. Its protein content is higher than that of the corn, however, it may vary, so it needs to be tested. Its crude fat content hence its energy content is lower. It contains less linoleic acid that may have a negative effect on the egg size. It has no pigmentation effect.

Middlings, if available, can be used up to 10-20%, considering their protein and fibre content.

Oat is high in fibre that limits its usage in poultry feed, but it can reduce weight gain at breeding stocks.

Millet is also high in fibre and has a hard and thick seed coat, the birds are unable to digest it without grinding.

Unfortunately, the price of both soybean meal and other alternative protein sources has risen and their availability has reduced. Sunflower and rapeseed have a high price too, but their meal can be used up to 10-15%, depending on the age group, plus they are more cost-effective compared to the extremely expensive soybean. Besides the meal, high-fat cakes and full-fat sunflower seeds or rapeseed are also available and provide sufficient energy for livestock.

As for legumes, **peas** could be used up to 5-10%, but unfortunately, they are rarely added to feed. Texas bluebonnet (Lupinus texensis) is even less common but it has a higher protein content (30-40%) than peas, and the sweet varieties could be used up to 10-15%.

Corn DDGS (Distillers Dried Grains with Solubles), a distiller's by-product, is one of the most widespread ingredients used in poultry feed. It has 25-30% protein and 8% fat content providing protein and energy for livestock. It can be added up to 5-15% to the poultry feed.

Dried yeast, the by-product of the alcohol industry, would also be an ideal ingredient applied up to 3-5%, as it has more than 40% protein content.

As **malt culm** is high in fibre, therefore, it is recommended in minimal quantity only.

Due to its high fibre and low energy content, the by-product of the corn starch industry **CGF** (Corn Gluten Feed) could only be used in a restricted amount, mainly in layer grower or waterfowl diets.

Maize germ is a useful ingredient, containing approx. 40% crude fat, therefore it is a valuable energy source. **Corn gluten** is high in protein (60%). It is expensive, so apply only a little amount (2-5%) mainly to the turkey starter, broiler, or layer feed for ideal skin and yolk pigmentation.


oats

The **oil** used for energy supplementation is also costly. **Fat, fat powder**, and **full-fat products** (soybean, rapeseed, sunflower), **cakes, maize germs** can be fed instead.

2. LOWERING PROTEIN LEVEL IN FEED

Protein level decrease can be beneficial in many aspects. Firstly, the cost of feed reduces. Secondly, nitrogen emission to the air falls. Lastly, it improves gut health.

The focusing on amino acid and digestible amino acid optimisation is a key element of protein level decrease. It means, setting the adequate quantity and ratio of amino acids.

In practice, digestible amino acid optimisation for poultry is as follows: the minimum value of lysine is determined and the rest of the amino acids are added depending on the lysine level. The Dutch Schothorst Feed Research* does not specify a minimum protein level. The protein level in broiler and turkey feed is determined by the applied synthetic amino acids and the required amino acid ratios, among other things, the glycine-serine level.

However, Schothorst does specify the maximum quantity of synthetic lysine, methionine, and threonine. The reason for this is, that the availability of synthetic amino acids is rapid but short, while that of the amino acids attached to proteins is longer.

3. ENZYMES, FEED ADDITIVES USAGE WITH MATRIX VALUE

Premix is seldom produced without a **phytase enzyme**. It is well known, that with phytase less MCP (Monocalcium Phosphate) needs to be applied and it makes feed cheaper. Enzyme producers and distributors recommend a higher dose of phytase in the premix to further lower the phosphorus and calcium content. Besides, it is a fact that the phytate complex degraded by the phytase enzyme contains not only phosphorus and calcium but also other macro- and microelements and amino acids. Therefore, the matrix values of phytase products consist of not only calcium and phosphorus but also sodium, digestible amino acids, protein, and energy. The more enzyme we use, the higher the matrix value we get. The matrix values of various raising purposes differ. Some producers recommend using the **NSP enzyme** not only in case of high wheat-barley content but also in general. In the case of a wheat-barley-triticale mixture, a higher energy value is calculated in the optimisation program, using a full matrix containing protein, energy, and amino acids as well.


sorghum

Different kinds of **protease enzymes** could be added to poultry feed. There is a type that contains a protein-degrading enzyme only and it is also available as a complex. These enable 0.5% protein reduction and also contain the matrix values of energy and digestible amino acid.


soybean

Mannanase enzyme products are available in both liquid and granulated forms on the market. The latter can easily be added to the premix. This enzyme is recommended for use particularly in high soy broiler, turkey starter, and grower diets. Mannanase is an energy-saving enzyme as it minimises energy loss caused by Feed-Induced Immune Response (FIIR) with the help of degrading ß-mannans that are present in soybean meal. Therefore, poultry can save more energy for growing and production. ß-mannan molecules show similarities to that of certain pathogens, they cause FIIR in poultry. For this, the immune system requires energy and other nutrients. In the case of its application, the energy content of the feed can be reduced by 0.2 MJ.

Adding **emulgent** to feed improves fat digestion and the amount of oil/fat mixed into the feed can be decreased.

The matrix values of different enzyme products, do not add up unlimitedly. Therefore, in the case of a combination of enzyme products, it is advisable to consult your supplier or a feed specialist to find out about the application of matrix values that need to be used in the case of the given feed.

** Based in the Netherlands, Schothorst Feed Research is an independent, international research centre that develops nutritional knowledge. It aims at putting the latest research results into practice. It offers comprehensive and up-to-date professional assistance for its clients in optimising production and maximising efficiency.*


maize

KLÁRA MÁKNÉ BRASCH | Product Manager, Poultry
Agrofeed Ltd.

AVIAN INFLUENZA

IS THERE A NEW VIRUS THAT MAY CAUSE PANDEMIC?

Only a few months have passed since the last major avian influenza (AI) pandemic of spring, 2020, and the **AI VIRUS WAS DETECTED AGAIN IN WILD BIRDS AND EVEN IN POULTRY BREEDING STOCKS** in Europe, at the end of October 2020.

They found 1,202 infected wild birds and reported 690 AI cases in breeding poultry and captive birds in the European Union, between 20 October 2020 and 7 March 2021.

Highly pathogenic H5N8, H5N5, H5N1, and H5N3 influenza viruses were isolated. *(Bodnár, L., 2021)*

THE NEW TYPE OF BIRD FLU A (H5N8) WILL SOON MUTATE AND ACQUIRE THE ABILITY TO BE TRANSMITTED BETWEEN HUMANS...

The possibility of human infection with avian influenza is not a novelty, however, during the 2020-2021 pandemic, Russian authorities notified detection of avian influenza A in human clinical specimens on 18 February 2021.

Seven positive avian influenza A (H5N8) cases were confirmed. These people were all poultry farm workers who participated in a response operation to contain an avian influenza A (H5N8) outbreak detected in a poultry farm in Astrakhan Oblast in the Russian Federation. Their age ranged between 29 to 60 years and five were female.

Between 3 and 11 December, a total of 101,000 of 900,000 egg-laying hens on the farm died. During the investigation about the reason for the mortality, avian influenza A (H5N8) was detected by the Russian veterinary laboratory and the result was confirmed by the World Organisation for Animal Health (OIE) on 11 December 2020. Culling of the large flock had begun, and it lasted for several days.

In addition to operations on the farm, sera were collected from the seven positive human cases for serological testing. The results were suggestive of recent infection. The cases remained asymptomatic for the whole follow-up duration, lasting for weeks. Nasopharyngeal swabs were collected during medical observation period and were tested negative for avian influenza A (H5N8). No obvious clinical manifestations were reported from any farm workers under medical surveillance, their family members, or other close contacts of the seven cases. Besides the Russian Federation, avian influenza A (H5N8) viruses were also detected in poultry or wild birds in Hungary, the Czech Republic, Romania, Bulgaria, Poland, Germany, the Netherlands, the United Kingdom, Kazakhstan, Egypt, Iraq, and Japan. During and after the culling of all the poultry, nasopharyngeal swabs and serum samples were collected from poultry farm workers and personnel involved in outbreak response at the farm. A total of 24 close contacts of the confirmed cases have been identified and traced. In total, 150 individuals were monitored for clinical indication of respiratory disease. They received antiviral prophylaxis therapy and remained asymptomatic during medical observation.

All seven cases with PCR-positive results and their close contacts showed no signs of clinical illness.

Infections with avian influenza viruses of the same clade (H5 clade 2.3.4.4) have been reported from China since 2014 in people with exposure to infected birds.

The likelihood of human infections with avian influenza viruses has been considered to be low. Based on currently available information, the risk of human-to-human transmission remains low.

Respiratory transmission of the AI virus occurs by droplets, similarly to human influenza. Hand contamination, direct inoculation of the virus, exposure to infected birds, or virus-contaminated materials are potential sources of infection. People involved in high-risk tasks such as contacting sick birds, culling and disposing of infected birds, eggs, litter, and cleaning of contaminated premises should be trained on how to protect themselves, and on the proper use of personal protective equipment (PPE). It would be advisable that people performing such duties be monitored during tasks and for seven days following the last day of contact. According to the World Health Organisation (WHO) guidelines, all human infections caused by a novel influenza subtype are notifiable. WHO stresses the importance of surveillance to detect genetic, epidemiological, or clinical changes associated with circulating influenza viruses that may affect human health.

All new influenza virus subtypes with the potential to cause a pandemic are being monitored by WHO, thus case definitions for diseases require notification. Evidence of illness is not required. In the case of a confirmed or suspected human infection, a thorough epidemiologic investigation of the history of exposure to animals and its details should be conducted. It is of the utmost importance that it should include early identification of unusual respiratory events that could signal or exclude person-to-person transmission. Clinical samples are collected by the local competent authority and sent to WHO from time to time. WHO suggests that travellers to countries with known outbreaks of avian influenza should avoid farms, contact with animals in live animal markets, entering areas where animals may be slaughtered, or contact with any surfaces that are contaminated with animal feces. Travelers should also wash their hands often with soap and water, which helps to avoid disease. *(WHO, 2021)*

According to Anna Popova, the Head of Russia's Consumer Watchdog, the new type of bird flu A (H5N8) will soon mutate and acquire the ability to be transmitted between humans. The forecast that it can happen has a rather high probability rate. It is likely to happen as the zone where the mutation happens is very movable and the mutation there continues. *(TASS, 2021)*

DR. ELŐD BAJCSY | Veterinary Expert on Poultry Medicine

LET'S GET TOGETHER

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14-17 SEPTEMBER, 2021
RENNES, FRANCE
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TETRA SELECTED FOR QUALITY

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