

## Scientific promotion of food safety

The independent testing laboratory WESSLING Hungary Kft. participated at Researchers' Night, organized on September 30, with several programs focusing on food testing and food safety.

A pepper competition was organized by our Joint Research and Training Laboratory on Separation (EKOL), operated jointly in the Lágymányos building of ELTE by the university and WESSLING: interested parties could learn about the most basic tools of analytical chemistry, they could observe how a real-world laboratory measurement, namely the measurement of pepper hotness, was performed. Many extremely hot peppers were submitted to the laboratory and, to the delight of the organizers, the even was also attended by numerous elementary and high school students.

Also for the high school age group was announced the only chemistry competition of Researchers' Night at the Klebelsberg Cultural Center, and the co-organizer this time was WESSLING Hungary Kft. volt. During the exercises and experiments, organizers tried to draw attention to the role played by chemistry in everyday life, using witty and demonstrative tools. Here are some of the topics: wine counterfeiting (detection of glycerol with copper sulfate), the chromatography of food dyes, preparation and operation of a breathalyzer, detection of the urease enzyme content of soy flour, recognizing counterfeit sour cream and weight loss products, preparation of a lemon battery. The success of the competition is indicated by the fact that many students submitted applications and came from all over the country (Hódmezővásárhely, Kecskemét, Budapest, Debrecen, Nyíregyháza, Vác, Győr), and the winners were awarded valuable gifts, offered by WESSLING Hungary Kft..

## About palinka at the Center of Scientific Wonders

Very intense programs await the general public at the CSOPA Playbar, the recently opened new scientific exhibition hall of the Center of Scientific Wonders in Óbuda: in addition to their great permanent exhibitions, interactive games, escape rooms and fascinating, multidimensional cinema halls, major scientific events are also organized every week.

The program called Science Mosaic took place recently, introducing the most innovative science-promoting centers, institutions and pro-

grams of Hungary (including the online chemistry competition Lab Adventure/Laborynth intended for high school students, which participated at the event with several experiments), hundreds of people also visited CSOPA on Researchers' Night where, in addition to the above, scientific presentations are organized as well, such as the Science Pub: an event promoting science, where experiments, spectacular cocktails and presentations await interested parties.

In collaboration with WESSLING Hungary Kft. starting from October, lectures will be given at the Center of Scientific Wonders on the topics of environmental protection, food safety and health protection. The October presentation of László Nagygyörgy titled "About palinka from a scientific point of view" was built on the topics of palinka raw materials, fruit picking, processing and mashing, distillation and the handling of the distillate.

This exciting lecture series continued on November 17 with the presentation of Dr. Tamás János Szigeti. The expert of WESSLING spoke about the physiological basis of organoleptic food testing: sensation, taste, smell, taste blindness, substantia nigra etc. We could find out what the fifth basic taste was, how our tongues worked, what role the sensory centers in the brain played, what action potential was, and what we needed to know about the world of tastes from a scientific point of view.

## Public information about additives

**Why do we need additives? Are there too many of them? What regulates their use? Actually, what do E-numbers mean?**

There is a lot of public information about additives. Some of these are based on reality to some extent, however, some of them are completely false. Answers to questions, of interest to everyone, are provided in the new series of the TOP Hygiene website.

It is clarified in these public interest articles, why additives are used during the food production process, whether too much of them is used, whether the use of additives is regulated, and how they are identified and grouped.

Interested parties can find numerous articles on food safety and hygiene on the www.top-higienia.hu website, for example, in an earlier series microorganisms occurring in restaurants and public catering were discussed by the editors.

## No 'zero limit value'

**Hormones and pesticides in drinking water? Bacteriological hazards? Numerous questions, affecting all of us, are discussed in the latest issue of Vízmű Panoráma (Waterworks Panorama), the journal of the Hungarian Water Utility Association. Fortunately, reassuring answers are provided by Dr. Tamás János Szigeti, expert of an independent laboratory performing water analyses as well...**

„Food testing – including that of water – is somehow aimed at maintaining health, at increasing the safety on which this is based. But to what extent, to what depth does it make sense to measure things?” – asked the the question the reporter of the journal of the Hungarian Water Utility Association, the association of Hungarian water providers.

This question immediately touched on one of the most important topics regarding testing laboratories, namely the question of the zero limit value. Tamás János Szigeti, an associate of WESSLING Hungary Kft. said that, with the evolution of technology, the limit of quantification can be continuously lowered. However, he added that it can never reach zero, because the value of zero cannot be measured, even if it can be approached infinitesimally, in theory, in smaller and smaller steps.

Putting it in the proper context is a judgement call, one has to decide, what the lower detection limit actually means – added the expert, who explained, in connection with rumors circulating about hormones in drinking water, that they breed on lack of knowledge and, in certain cases, human stupidity, and they are often driven by business interests whose purpose is that people drink something else other than tap water.

## **Laborynth: a way out from the maze of chemistry**

**The latest round of the Lab Adventure online chemistry competition started on the internet on October 5. The ten high school winners of the chemistry competition named Laborynth, leading players through time and space, will have the chance to work with real laboratory instruments, then they can perform experiments at the Center of Scientific Wonders, where they can also experience other adventures of a lifetime.**

Competitors have to escape the underground maze of the Laborynth online chemistry compe-

tition by jumping through time and space, with the help of the great scientists of history. The goal of the online competition, announced for the second time, is to promote chemistry and food safety.

How to cook the best pasta? What are all the uses of baking soda? Why does cheese have holes? What happens to melons, if they are cooled in sea water? How much alcohol is in kefir? All these questions have already been answered for the thousands of students participating in the programs of Lab Adventure, that have been announced for three years already.

All interested students and teachers can join Laborynth at the [www.laborkaland.hu](http://www.laborkaland.hu) site.

## **Safe halal foods**

*Exemplary European quality management system developed for products to be sold in Islamic countries*

**In the future, control of the production of European foods and consumer goods intended for the markets of Islamic countries will be ensured by a joint system of the supervisory authority of foods and consumer goods prescribed by the Islamic faith and a Hungarian independent testing laboratory. Under the international treaty signed in Budapest on October 26, products meeting halal standards and the requirements of 21st century quality management can be sold to European Muslim consumers, as well as in Islamic markets.**

Production, marketing and consumption principles of foods and consumer goods are described in the Islamic holy book, the Quran. The concept of halal means permissible goods and services, and according to this, faithful Muslims buy and consume foods that have been certified as halal. Fifteen years ago, the sales of halal goods was unmeasurable and, compared to that, today's figures show a dynamic growth, they comprise roughly 30% of the gross turnover (according to 2014 data, the Islamic world's turnover of goods and services was nearly 1 trillion USD).

One of the signatories of the treaty, Abdalla Sharief, chief financial officer of EU HALAL FATWA and chairman of the UN Vienna branch Correspondents Association said that guidelines for halal goods have been issued in the last ten years by different regions of the Islamic world, regulating the production phases, storage, packaging and transport of the goods. Based on these, there

are halal standards now in Indonesia, Malaysia, the United Arab Emirates, as well as a standard issued by the Organisation of Islamic Cooperation (OIC).

EU HALAL FATWA (European Fatwa Council for Halal Transaction) was founded in Vienna in 2014 as a recognized halal authority, to develop a comprehensive, EU-wide regulation of halal principles that includes, in addition to Islamic requirements, European food safety principles and test methods as well – emphasized Dr. Balázs Mihálfy (Sheikh Dr. Abdel Rahmann Mihálfy), president of EU HALAL FATWA.

This regulation includes the entire range of product manufacture and sales, while scientific, laboratory and legal background is provided by the other signatory of the treaty, WESSLING Hungary Kft., an independent laboratory that has been supporting domestic food safety with its accredited analyses for a quarter of a century.

The result of the joint work of EU HALAL FATWA and WESSLING has been two halal standards. One of them is based on a combination of the professional improvement of OIC halal guidelines and a system incorporating European food safety standards. The other one can be applied in itself or in combination with another regional halal standard – said Dr. Andrea Martin of WESSLING Hungary, who played an important role in the professional development of the system. With the help of the two standards, on the one hand, reliable food safety control can be provided to markets of Islamic countries following OIC guidelines, and on the other hand, guaranteed quality foods and consumer goods can be enjoyed by markets of Islamic countries where there have been other regional regulations in effect, or no relevant standard existed before.

In addition to the president and the chief financial officer of EU HALAL FATWA, the treaty was signed by Dr. László Zanathy, managing director of WESSLING Hungary Kft. The event was honored by the participation of founder Dr. Erwin Weßling, and also Dilara Abdullayeva, president of the Asian Hungarian Society, Tibor Kisvárdai, sponsorship director of Bp2017 Nonprofit Kft., organizer of the 2017 World Aquatics Championships to be held in Hungary, and Dr. Adrienn Micsinai, business unit manager of the Food Safety Business Unit of WESSLING.

The treaty, which is exemplary and forward-looking according to those present, is also of great importance, because, in addition to monitoring and auditing, through the religious supervision of EU HALAL FATWA and the work of the

WESSLING laboratory network, it promotes the sales of the products of European exporters in the markets of Islamic countries.

## NÉBIH news

### Cane sugars available in Hungary are really made of sugar cane

In its latest product test, ever more popular brown sugars and brown cane sugars were examined by the National Food Chain Safety Office. As part of the Szupermenta (Supermint) project, the origins and heavy metal and pesticide residue contents of the sugar products were tested by the authority, among other things, and it was also examined whether their nutritional value was indeed higher than that of well-known crystal sugars made of sugar beet. Of the 25 products inspected, authority proceedings were initiated in 15 cases, due to labeling deficiencies.

In the product test, 22 brown cane sugars and 3 brown sugars were inspected by the associates of NÉBIH. Of these, 20 products were mainly imported crystal sugars, while 5 of them were sugar cubes.

Based on a risk assessment, the lead, cadmium, mercury, arsenic and copper contents, i.e., the heavy metal contamination level of the products were checked by the authority. Of the nine cane sugars inspected in the laboratory of NÉBIH, the values were below the limit of detection in the case of four, while for the other five products, the values were negligible. Pesticide residue analyses were performed by the expert for 307 different active ingredients, and no objectionable values were found for any of the products. Isotopic measurements showed that all of the products labeled as cane sugar were indeed made from sugar cane.

It was also determined clearly that brown sugars and brown cane sugars did not contain significantly more minerals than well-known white crystal sugars. And their sucrose or sugar contents were practically the same.

Experts of the authority found those products objectionable, which were not organic products, but the “organic” designation was in the company name on the label, in such a way that the ecological origin of the product was emphasized by the company name for the customer, although it did not actually come from organic farming. Because of labeling problems, author-

ity proceedings were initiated by NÉBIH for 15 of the 25 products inspected. During these, manufacturers and distributors of the sugars are ordered to correct the errors.

The appearance, color, taste and smell of the sugars were tested by experts and laypeople in preference tests. Important factors for sugar cubes were dissolution, and that they shouldn't crumble when taken out of the box. Tests were performed not only in the dry state, but also in „lemonade state”.

Further information and detailed test results are available on the NÉBIH [Supermint product test site](#).

### **20 tons of honey recalled by NÉBIH**

**After months of preliminary data collection, inspection of a wholesale retailer and then of a honey packaging plant was performed by the National Food Chain Safety Office (NÉBIH). As a result of the series of inspections, nearly 20 tons a honey, containing foreign sugar, was seized by the inspectors.**

Authority samples were taken by the experts from the different packaging lots of 4 kg multiflower honey marketed by the wholesale retailer. Accredited laboratory tests showed that more than 30% of the lots samples contained a sugar that can only be found in the honey collected by the bees in very low amounts. This so-called four-carbon sugar only occurs in the nectar of certain plants, with amounts not exceeding 7%.

The inspection was continued by the authority at the honey packaging plant, the supplier of the wholesale retailer. Here, products were found again among the lots inspected and sampled by the experts that were objectionable because of the same reasons, based on the results of laboratory tests.

The lots in question – nearly 20 tons of honey in total – were recalled by the retailer at the order of the authority. Products containing foreign sugar were not sold in retail, because they were primarily marketed to food production plants.

Further follow-up investigation on the matter are carried out by NÉBIH.

### **Seven countries affected so far by the Salmonella outbreak**

Between May 1 and October 12, 2016, human *Salmonella Enteritidis* infections were reported by seven countries, 112 of which were confirmed and 148 were likely. Cases were reported from Belgium, Denmark, Luxembourg, the Netherlands, Norway, Sweden and the United Kingdom. A collective case was reported by Croatia, where there was one death, possibly connected to the infection. Tests showed that the infections can be traced back to an egg packaging plant in Poland. The most likely source of the infection were eggs. Distribution of the suspicious lots have been stopped by Polish authorities and the member states involved.

Enhanced monitoring (survey) is recommended by ECDC and EFSA to member states, including Hungary, and attention is drawn to continuous information exchange regarding epidemiological, microbiological and environmental tests, including reports through the RASFF (Rapid Alert System for Food and Feed) and EWRS (Early Warning and Response System) systems. New cases have to be reported to the EPIS-FWD (Epidemic Intelligence Information System for Food- and Waterborne Diseases) as well, a system dealing with food- and drinking water-borne diseases.

Because of the extent of the incident and its high food safety risk, enhanced testing of egg shipments for food purposes from Poland was already ordered by Róbert Zsigó, state secretary responsible for food chain supervision. The series of inspections lasting till November 4 affects all domestic egg packaging and processing facilities. In addition to checking traceability, expert take samples from all Polish egg lots for food purposes in order to test them for *Salmonella*.

### **Detailed report on the year 2015 of NÉBIH**

The annual report of the chief veterinarian on food chain safety and the use of the supervision fee has been completed. The document summarizing the data of 2015 provides a comprehensive picture about food chain supervision and the activities of the National Food Chain Safety Office (NÉBIH), operating as the background institution of the Ministry of Agriculture (FM). The results of last year are nearly three million laboratory tests, 1.2 billion HUF in fines and the prevention of 2 billion HUF in tax evasion, among other things.

The Ministry of Agriculture is committed to making sure that high quality, safe foods reach the tables of Hungarian people. Therefore, during its work, the State Secretariat Responsible for Food Chain Supervision, in charge of the policy management of the field, strives to establish a stable and supporting legal environment for the stakeholders of the sector. With this in mind, when making or modifying regulations, decisions are made by the state secretariat taking into account professional proposals and recommendations. In addition to FM, food chain safety is guarded by its background institution, NÉBIH.

Since the introduction of the food chain supervision fee in 2012, a report is prepared each year by the chief veterinarian on the use of the fee, as well as on the state of food chain safety, through the work of NÉBIH. The activities and facilities of businesses were continuously inspected and supervised by the office in 2015 as well, from soil protection through plant protection and animal health care to the hospitality industry. Activities and results of the individual areas are presented in the summary in a sector by sector breakdown.

Nearly three million tests on more than one million samples were carried out last year in the laboratories of the office. For operating a successful supervisory system, maintaining an efficient laboratory background is of key importance. This effectiveness is ensured by the fact that Hungarian laboratories related to the food chain operate within a single organization, NÉBIH, and not in a fragmented way. All the reaccreditation procedures performed in 2015 concluded successfully in all cases, and the laboratories of the office also successfully participated in international collaborative studies.

Among the key professional achievements of last year can be mentioned the curbing of the bluetongue epidemic. Another major success was the launching of the quality-guided public catering project, during which 723 public catering kitchens, responsible for the catering of 400,000 people, were qualified by the experts of the authority, based on food safety and quality aspects.

The State Fisheries Protection Service, operating since May 1, 2015, has proved its effectiveness in a short time. Proceedings were initiated against more than 130 illegal anglers and fishermen by the officials of NÉBIH, and fish protection fines of roughly 2 million HUF were imposed.

703 inspections, with a 90% efficiency, were performed by the central supervision group of NÉBIH responsible for detecting food counterfeiting and black market activities, and more than 2,000 tons of products were recalled. Illegal

slaughterhouses and meat processing plants, as well as businesses manufacturing reform products were inspected by the experts of the task force several times. In the area of food counterfeiting, the highest profile case was one of foie gras counterfeiting, at the end of which roughly 5 tons of counterfeit product (worth thirty million HUF) was seized and a fine on the order of tens of millions was imposed.

91 inspections were launched by the experts of the office to investigate unfair marketing practices, many of which were targeted inspections. Areas of the latter included, for example, the selling of pork below purchase price, the use of progressive bonus and violating the prohibition of discriminatory pricing. Of the 39 inspections concluded, 11 ended with warnings or fines. The total sum of product chain supervision fees imposed in 2015 exceeded 150 million HUF.

In accordance with the objectives formulated in the Food Chain Safety Strategy, NÉBIH strives to establish a partnership with the stakeholders of the food chain, so it does not only inspect, but also helps producers and businesses with training and advice. A good example of this is the field of food export to so-called third countries, in which 66 inspections were carried out and all of the businesses trained by the office complied with regulations successfully. As a result, businesses were awarded the possibility to export beef to China, or bovine offals to Russia.

Customer awareness also plays a key role in reducing food safety risks. With its awareness-raising campaigns and active media presence, NÉBIH strives to draw the attention of the public to its role in the food chain, and to prepare people to avoid hazards, by sharing information and knowledge. The Supermint campaign assisting in the selection of quality products, the Choose food wisely campaign, demonstrating kitchen technological knowledge, and the Free to own campaign promoting responsible pet keeping, all operated in this spirit last year. In 2015 was launched the seeing-mate project, drawing attention to the importance of training guide dogs and other assistance dogs.

Roughly 2,400 phone calls and 4,500 electronic requests were fielded by the customer service of the office last year. More than 12 thousand people called the toll free number of NÉBIH, of these 1,300 were public service reports. Thanks to the 2015 development of the NÉBIH Navigator associated with the toll free number, not only reports can be registered by the users through the application, but several databases can be accessed as well.