Symposium "Current Approaches to Prevention and Control of Honey Bee Diseases" – to mark the 120th anniversary of the birth of academician Ivo Tomašec

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The symposium was devoted to mark the 120th anniversary of the birth of the distinguished Croatian scientist academician Ivo Tomašec (Novi Marof, October 16th 1904 – Zagreb, July 11th 1981). He marked Croatian veterinary science and profession of the 20th century with his scientific work and international reputation.

The symposium was held on November 6th, 2024 in the Library of the Croatian Academy of Sciences and Arts (CASA). It was organized by the Animal and Comparative Pathology Committee of the Medical Sciences Depatment of CASA. At the beginning of the Symposium, the participants were welcomed by academician Vida Demarin, the secretary of the Medical Sciences Departtment, and academician Josip Madić, the chairman of the Animal and Comparative Pathology Committee.

After the welcome addresses, Josip Madić briefly presented the scientific and professional work of academician Ivo Tomašec. He pointed out his most important achievements and his international reputation. He highlighted his work as the distinguished member of the World Organization for Animal Health (former Office International des Epizooties, OiE) in Paris where he held the position of vice-president of the Fish Diseases Commission and the Bee Diseases Commission. As recognizable scientist and expert, he was dedicated to working in Croatian veterinary professional and scientific organizations. Among others, he was the president of the Croatian Veterinary Society, the president of the Ichthyological Society of Yugoslavia, and long-time president and one of the founders of the Croatian Beekeepers Federation. He was dean for three terms and vice-dean for two terms of the Faculty of Veterinary Medicine University of Zagreb.

Professor Ivana Tlak Gajger, PhD, from the Department of Biology and Pathology of Bees and Fish, Faculty of Veterinary Medicine, University of Zagreb, discussed some factors, such as the presence of pathogens, parasites, pests, invasive species, negative climatic and environmental conditions, lack of food, and intensification of agriculture, as the main causes of bee depopulation and losses in apiaries.

Professor Aleš Gregorc, PhD, from the Faculty of Agriculture and Life Sciences, University of Maribor, addressed the topic of innovative ways to control *Varroa destructor* for sustainable beekeeping.

Zlatko Tomljanović, PhD, Ministry of Agriculture, Forestry and

Fishery, Republic of Croatia, presented the results of genotyping of the Croatian isolates of the bacterium *Paenibacillus larvae*. Genotype ERIC I was determined in honeybee colonies with a high prevalence of 90.3%, and genotype ERIC II with 7.3%.

At the end of the first session, Professor Metka Pislak Ocepek PhD, Veterinary Faculty, University of Ljubljana, discussed molecular diagnostics of honeybee diseases on samples of hive debris. She emphasized that, after development of modern molecular diagnostics (PCR and qPCR), debris from the hive bottom board is a universal sample for determining the presence of pathogenic microorganisms in the bee colony, such as the bacteria *Paenibacillus larvae* and *Melissococcus plutonius*, and numerous viruses as well.

After the break, the second part of the symposium started with a lecture about the importance of veterinary laboratory diagnostics and honeybee diseases monitoring for public health. The topic was presented by Slaven Grbić from Veterinary Laboratories Slaven d.o.o. and University of Veterinary Medicine Budapest. He stressed that in the future, attention should also be paid to the possibility of using artificial intelligence to protect honeybee health.

Damir Pavliček, PhD, from the Croatian Veterinary Institute, Veterinary Institute Križevci, provided an overview of intricate impacts of neonicotinoids on bee behavior and health. He concluded that the toxicity of neonicotinoids depends on the way bees are exposed to these systemic insecticides, but also on the age of the examined honeybees, subspecies, diet, physiological state and handling during testing.

Professor Dražen Lušić, PhD, Faculty of Medicine, University of Rijeka, focused on the use of beehive products for biomedical purposes. He provided a summary of recent findings on the health effects of bee products as well as the scientifically grounded potential they exhibit.

After the final presentation, a discussion was opened about all the topics that had been presented. The discussion was mostly directed towards the specific subjects such as the abuse of antibiotics for treatment of bee diseases, American foulbrood prevention, and the potential risk that neonicotinoids pose to honeybee health.

The event drew over 90 participants, including researchers, veterinarians and beekeepers. A booklet of summaries of all lectures was issued.