



International Conference “Apitherapy for Children 2024”

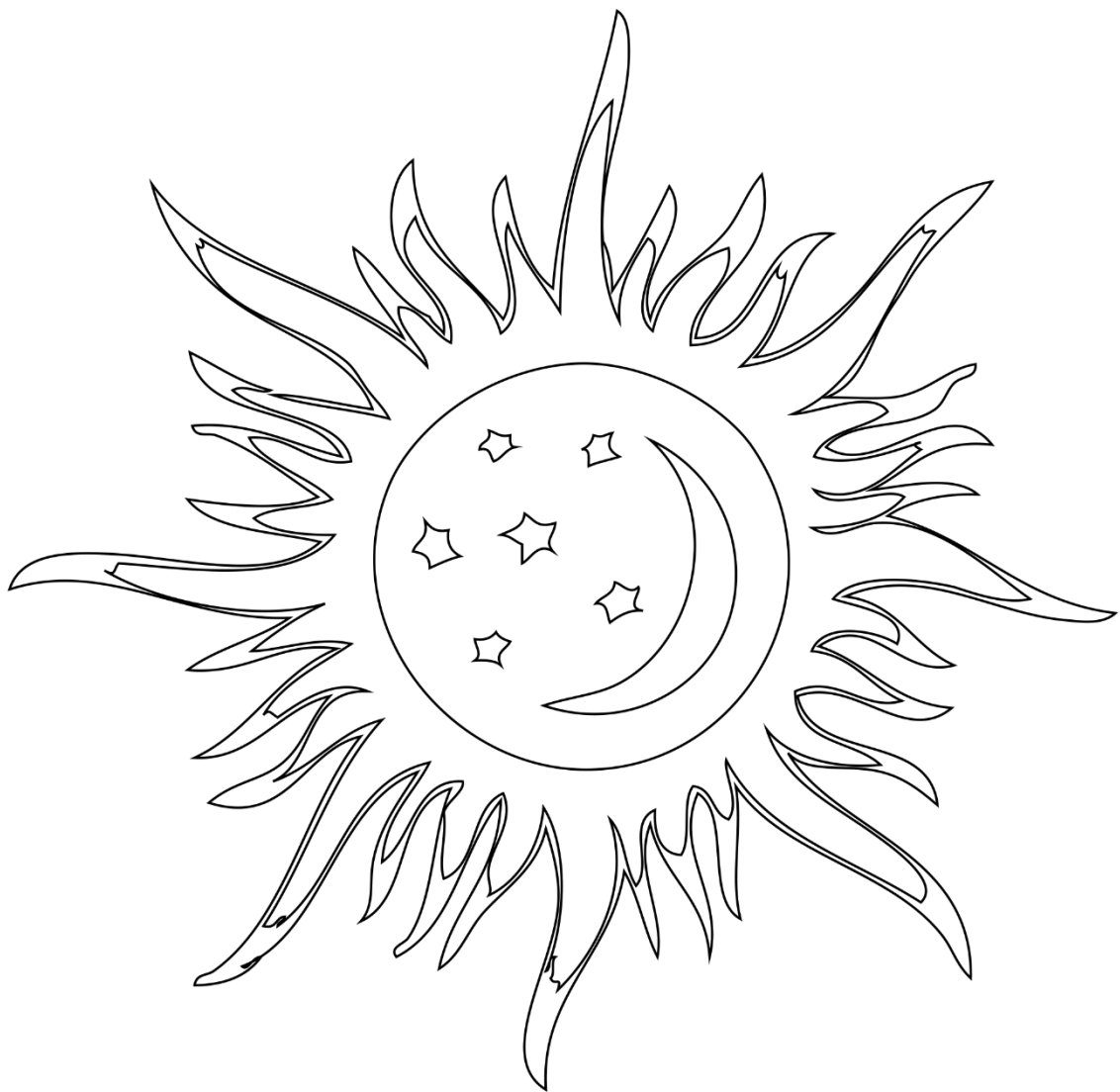


e-Book of abstracts



Zavod za razvoj empatije
in ustvarjalnosti Eneja





International Conference "Apitherapy for Children 2024"

e-Book of abstracts and papers

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in ustvarjalnosti Eneja



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Content

Program	5
Saturday, 24 February, 2024.....	5
Sunday, 25 February, 2024	7
Report	10
Organization Structure	13
Abstracts	14
Introduction to the world of apitherapy for children and apipedagogy	15
Apitherapy for Children in China.....	16
Beehive Air Therapy for Children	17
Effect of bee products on viruses that cause upper respiratory tract infections in children.....	18
Propolis Greit 120 and HuFN- α N3 show anti-influenza virus activity <i>in vitro</i> *	19
Honey as an alternative treatment of bronchial asthma in children	20
Buzzing into the World of Bees for Young Minds.....	21
Children's first contact with bees.....	22
eTwinning Project "Be Like a Bee"	23
Education to the development of apiculture in elementary school.....	24
Green Library for Green Zagreb: Little School of Beekeeping at Savica Library	25
Apitherapy as a growing added value of the small town.....	26
The story from Lič	27
Api-Nutrition for infants and children	28
Bee products for children. Clinical cases.	29
All the benefits of bee products on children's health	30
The effect of royal jelly on hormones during adolescence.....	31
Properties of honey and the mechanism of strengthening the immune system.....	32
The importance of analyzing products used in apitherapy	33
Propolis extract – quality analysis and use in semisolid formulations.....	34

Shantala Massage- proposal of massage with honey benefits	35
Ancient Medicines for Today's Children	36
Bee products in the diet of pregnant women, nursing mothers, and children	37
Experience of honey bee colony as a model for collective decision-making	38
The Influence of Beekeeping Club on the Health and Comprehensive Development of Primary School Students	39
Improvisation and the Theater by Keith Johnstone for the purpose of educating students on the proper way of conduct at the Apiary	41
Kindergarten "Magic Forest" - a Sweet Story.....	42
Apiaromatherapy is the most effective help from nature.....	43
Api - package for children and youth	44
Sponsors & Supporters	45



Program

Coordinator of the Conference: **Dora Dragić**

Saturday, 24 February, 2024

7.00 – 9.00 am	Registration (movies on topics autoplay)	
9.00 – 9.10 am	Introductory greetings	
Moderators: Nina Ilič & Gordana Hegić		
9.10 – 10.10 am	Introduction to the world of apitherapy for children and apipedagogy	Nina Ilič, B.Sc. Public Administration <i>Institute Eneja, Slovenia</i>
10.10 – 10.30 am	Use of medical grade bee products for pediatric apipediatriy, rules, and principles	Dr. Stefan Stangaciu, <i>Romanian Apitherapy Society, Romania</i>
10.30 – 10.40 am	Honey brake (movies autoplay)	
10.40 – 10.55 am	Apitherapy in China	Dr. Zhang Quinglong ¹ , Dr. Cui Quinglong, Zhang Luyao Quinglong <i>¹ Special Apitherapy Committee of the Traditional Chinese Medicine Society, China</i>
10.55 – 11.40 am	Apitherapy for children in China	Dr. Bridget Goodwin <i>Australian Apitherapy Association, Australia</i>
11.40 – 12.00 am	Beehive air therapy for children	Beate McKenzie, Dipl. Business Economist (BA) <i>Beecura Ltd. United Kingdom</i>

12.00 – 12.20 pm	Effect of bee products on viruses that cause upper respiratory tract infections in children	Dr. Sibel Silici <i>Erciyes University, Department of Agricultural Biotechnology, Kayseri, Turkey</i>
12.20 – 12.40 pm	Propolis Greit 120 and HuIFN- α N3 show anti – Influenza virus activity in vitro	Bratko Filipič¹, Klemen Rihar², Dunja Exel Gregorič³, Hrvoje Mazija⁴ ¹ <i>Slovenia</i> ³ <i>Slovenia</i> ⁴ <i>Faculty of Veterinary Medicine, University of Zagreb Croatia</i>
12.40 – 1.40 pm	Lunch break (movies autoplay)	
1.40 – 2.00 pm	Honey as an alternative treatment of bronchial asthma in children	Prof. Dr. Mamdouh Abdulrhman <i>Faculty of Medicine; Ain Shams University; Cairo; Abbasia; Egypt</i>
<i>Moderators: Laura Javoršek & Tanja Schleis</i>		
2.00 – 2.20 pm	Buzzing into the world of bees for young minds	Dr. sc. med. Zorica Plavšić pulmonologist, allergist, apitherapist <i>ApiMed Serbia - First International Medical Society for Apitherapy Serbia Serbia</i>
2.20 – 2.40 pm	Children's first contact with bees	David Mardešić <i>BeeCenter Serbia</i>
2.40 – 3.00 pm	eTweinning project »Be like a bee«	Valentina Glavica <i>Kindergarten Duga, Zagreb Croatia</i>
3.00 – 3.20 pm	Education to the development of apiculture in elementary school	Ana Marošević, Mihaela Pokrivka, Anita Dragić <i>Primary school of King Tomislav Našica Croatia</i>
<i>Moderators: David Mardešić & Janko Božić</i>		
3.20 – 3.30 pm	Video treat: Beekeeping in Hawaii, USA	Trent J. Balduff <i>Bee Here Now Hawaii, USA</i>
3.30 – 3.40 pm	Green library for green Zagreb: Little school of beekeeping at Savica Library	Barbara Balenović, Snježana Ercegovac, Maja Selak <i>Zagreb City Libraries</i>

		<i>Croatia</i>
3.40 – 3.50 pm	Apitherapy as a growing added value of the small town	Katja Peruzzi Bahč, Food and Nutrition Engineer <i>Bee walk in Mežica – ITER APIUM</i> <i>Mežica, Slovenia</i>
3.50 – 4.00 pm	The story from Lič	Silvija Sobol, Jelena Milošević, Petar Hrg <i>Fuzine Tourism Department</i> <i>Institution, KTD Fužine d.o.o.</i> <i>Croatia</i>
4.00 – 4.15 pm	Conclusion of the first day of the conference	Nina Ilič, B.Sc. Public Administration <i>Institute Eneja</i> <i>Slovenia</i>

Sunday, 25 February, 2024

7.00 – 9.00 am	Registration (movies autoplay)	
Moderators: Bridget Goodwin & Zorica Plavšić		
9.00 – 9.30 am	Api-nutrition for infants and children	Alina Varadi ¹ , nutritionist, Rodica Margaoan ² , PhD, Dr. Mirela Strant ³ <i>¹ Casa Bio</i> <i>² University of Agricultural Sciences and Veterinary Medicine</i> <i>³ Api-Phito-therapy Cluj-Napoca, Romania</i>
9.30 – 10.00 am	Bee products for children. Clinical cases.	Dr. Mirela Strant <i>Api-Phito-therapy Cluj-Napoca Romania</i>
10.00 – 10.20 am	All the benefits of bee products for children's health	Ariana Penava, M. Sc. Nutrition <i>Institute for Public Health Protection of Požega – Slavonia Croatia</i>

10.20 – 10.40 am	The effect of Royal jelly on hormones during Adolescence	Dr. Sibel Silici Erciyes University, Department of Agricultural Biotechnology, Kayseri, Turkey
10.40 – 11.00 am	Properties of honey and the mechanism of strengthening the immune system	Prof. Dr. Midhat Jasić Faculty of Pharmacy, University of Tuzla, Bosnia and Herzegovina
11.00 – 11.10 am	Honey break (movies autoplay)	
Moderators: Midhat Jasić & Anna Kurek-Gorecka		
11.10 – 11.15 am	The importance of analyzing products used in apitherapy	dr. sc. Gordana Hegić, mag. ing. agr. Croatian Apitherapy Society Croatia
11.15 – 11.35 am	Propolis extract – quality analysis and use in semisolid formulations	Dr. Kristina Ramanauskiene, Dr. Asta Marija Inkeniene Department of Clinical Pharmacy Lithuanian University of Health Sciences, Lithuania
11.35 – 11.55 pm	Shantala Massage – proposal of massage with honey benefits	Dr. Anna Kurek-Gorecka Medical University of Silesia Poland
11.55 – 12.15 pm	Ancient medicines for today's children	Trent J. Balduff Bee Here Now Hawaii, USA
12.15 – 12.35 pm	Bee products in the diet of pregnant women, nursing mothers, and children	prim. mr. sc. Josip Lončar dr. med. specialist in family medicine Health Care Institution Dr. Lončar Croatia
12.35 – 1.35 pm	Lunch break (movies autoplay)	
Moderators: Stefan Stangaciu & Alina Varadi		
1.35 – 1.55 pm	Experience of honey bee colony as a model for collective decision-making	Dr. Janko Božič University of Ljubljana, Biotechnical Faculty, Department of Biology Slovenia
1.55 – 2.15 pm	The Influence of the Beekeeping Club on the health and Comprehensive Development of primary school students	Laura Javoršek, prof. biology and home economics Elementary school Ob Rinži, Kočevje

		<i>Slovenia</i>
2.15 – 2.35 pm	The role of a teacher in the vocational program of preschool education and apipedagogy	Metka Krajnc Sevšek, prof. pedagogy <i>Gymnasium Celje – Center Slovenia</i>
2.35 – 2.55 pm	Improvisation and the Theater by Keith Johnstone for the purpose of educating students the proper way of conduct at the apiary	Tanja Schleis, mag. edu. philol. germ. <i>A.G. Matoš Đakovo Gymnasium Croatia</i>
2.55 – 3.15 pm	Kindergarten "Magic Forest" - A sweet story	Nela Drača¹, Ana Šantić², Blanka Bilić-Rajs³, Prof. Dr. Sc. Ivana Flanjak³, Ivana Nemet¹ <i>¹ Technological and innovation center Virovitica</i> <i>² The Magic Forest Kindergarten</i> <i>³ University of Josip Juraj Strossmayer in Osijek, Faculty of Food Technology Osijek Croatia</i>
<i>Moderators: Fani Hatjina & Metka Krajnc Sevšek</i>		
3.15 – 3.25 pm	Api-Aromatherapy is the most effective help from nature	Dr. Sc. Zrinka Franić, dr. med., dr. sc. Gordana Hegić, mag. ing. agr. <i>Croatian Apitherapy Society Croatia</i>
3.25 – 3.35 pm	Apitourism for children and youth II.	Dominika Koritnik Trepel <i>Slovenian Professional Guides Association Slovenia</i>
3.35 – 3.50 pm	Round table and conclusion of the conference	



Report

The international conference was organized by the Institute for the Development of Empathy and Creativity Eneja in cooperation with the Croatian Apitherapy Association. President of the conference: Nina Ilič (Slovenia); vice-president of the conference: Gordana Hegić (Croatia).



Experts from 10 countries participated in the organization, the Organizing and Scientific Committee consists of experts from Slovenia, Croatia, Greece, Serbia, India, the USA, Hawaii, Australia, Romania, Bosnia and Herzegovina, and Egypt. The official language of the conference is English.

The conference was held online on February 24-25, 2024, with a total duration of 16 hours. On both days, the unofficial part of the conference started two hours before the opening. During this time (and during all breaks) the participants could watch interesting videos on the topic of beekeeping and apitherapy for children.

Even before the conference itself, I and the conference were greeted by Dr. Chen from China: <https://youtu.be/CK0yyybumX0?si=x3Tjrfd0hwWe2HT0>

The conference began with a few-minute video inauguration speech by Mr. Jiří Píza, president of the International Center for Young Beekeepers from the Czech Republic. He welcomed the participants and expressed his sympathy for the great activity of the organizers in the field of apitherapy for children. We thank the esteemed gentleman for the time and attention with which he graced the conference: <https://www.veed.io/view/366875f1-328b-448e-aa76-2d3c3fe14ac7?panel=share>

The lecturers were experts from professional and scientific institutions in the following sciences: nutrition, apitherapy, medicine, pharmacy, education, tourism, culture, agriculture, and veterinary medicine. Conference program: <https://apisretis.wixsite.com/website-3/preliminary-program>

The conference had a total of 186+ participants from 30 countries: Australia, Austria, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech Republic, Denmark, Egypt, Estonia, Ghana, Greece, India, Indonesia, Italy, Kosovo, Lithuania, Netherlands, Nepal, Nigeria, Palestine, Peru, Poland, Romania, Rwanda, Serbia, Slovenia, Turkey, United Kingdom and United States of America.

It is a special honor for us that with the conference we proved and demonstrated effective professionalism and integration in the sense of collegial integration and cooperation of various disciplines. Apitherapy is an interdisciplinary and complementary science that touches different sciences differently. We are proud that the conference, with the support of professional authorities, made it possible to obtain points for participation in the conference for doctors (Slovenia and Croatia), pharmacists (Bosnia and Herzegovina), and educators (Slovenia and Croatia). The conference was a great success also because it represented an opportunity for career development of various scientific profiles, which means for apitherapy - following its interdisciplinary and complementary nature - a good example of good collegial practice in cooperation and thus support step for quality development of apitherapy in Slovenia.

Slovenian apitherapy, which in Slovenia is defined as a combination of professional consulting services regarding the consumption of bee products, honey massage, and therapy with the inhalation of bee air, has also garnered enthusiasm in the international environment with ©Apipedagogy since such systematically regulated and professionally conducted apitherapy in kindergartens is not known anywhere elsewhere in the world. The possibility of participating in Apipedagogy through the international API network of kindergartens and schools APIS RETIS was also presented, as the only network that enables apipedagogy in a professional and original format.

The conference "Apitherapy for Children 2024" is our common pride and a great success, as it forged new ties, fresh ideas, and international collaborations. All of us worked in a connected, orderly, professional manner all the time, which resulted in an extremely pleasant atmosphere, a smooth process, and a pleasant and at the same time professional experience. Despite the many presentations, all professional presentations were comprehensive and specific.

The Eneja Institute team would like to express thanks with deep respect and gratitude for their invaluable contribution to:

- President of the Croatian Apitherapy Association Gordana Hegić.
- Chairman of APIMONDIA's Scientific Commission on Bee Health Fani Hatjina.
- President of International Network Bee Path Cities Maruška Markovčič.

- All the invaluable members of the Organizing and Scientific Committees of the conference: Nina Ilič, Midhat Jasić, Bridget Goodwin, Stefan Stangaciu, Stanko Rajić, Madouh Abdulrhman, Trent Balduff, Tanja Balažic Peček, Tanja Schleis, Loretta Andrade, Zorica Plavšić, Janko Božič, and Rok Kopinč.
- All the excellent lecturers and authors of papers for presentations and moderation - in order of the conference: Nina Ilič, Stefan Stangaciu, Zhang Luyao, Bridget Goodwin, Beate McKenzie, Sibel Silici, Bratko Filipič, Klemen Rihar, Dunja Exel Gregorič, Hrvoje Mazija, Mamdouh Abdulrhman, Zorica Plavšić, David Mardešić, Valentina Glavica, Ana Marošević, Anita Dragić, Mihaela Pokrivka, Trent J. Balduff, Barbara Balenović, Snježana Ercegovac, Maja Selak, Katja Peruzzi Bahč, Silvia Sobol, Jelena Milošević, Petar Hrg, Alina Varadi, Rodica Margaoan, Mirela Strant, Ariana Penava, Midhat Jasić, Gordana Hegić, Kristina Ramanauskiene, Asta Marija Inkeniene, Anna Kurek-Gorecka, Josip Lončar, Janko Božič, Laura Javoršek, Metka Krajnc Sevšek, Tanja Schleis, Nela Drača, Ana Šantić, Blanka Bilić-Rajs, Ivana Flanjak, Ivana Nemet, Zrinka Franić in Dominika Koritnik Trepel.
- All esteemed conference participants.
- President of the International Center for Young Beekeepers from the Czech Republic Jiří Píza.
- A doctor from a hospital in China dr. Chen, and the medical doctors' parents Qiunglong.
- Coordinator of the conference Dora Dragić. She followed the course perfectly and followed the guidance.
- All supporters and sponsors.
- President of the Beekeeping Association of Slovenia Boštjan Noč, for publishing the conference announcement on the association's website.

Cordially thank you all!

It is nice to gather information and give such a report. Especially knowing that we achieved everything we achieved together. Thank you all for the team spirit, for the constructiveness, for the connection, time, and knowledge. It is the irreplaceable and indispensable energy of each of you (us) that ensured that the conference was of such professional quality, scientific-connective, effective, good for the development of apitherapy both in Slovenia and abroad, and at the same time enjoyable.

THANK YOU. You are cordially invited to view the testimonials of the participants: <https://apisretis.wixsite.com/website-3/testimonials#anchor-1>

Sincerely yours,

Nina Ilič



President of the International Conference »Apitherapy for Children 2024«
and Founder of the Institute Eneja



Organization Structure

Nina Ilič, Institute for the Development of Empathy and Creativity Eneja,
President of the conference

Gordana Hegić, Croatian Apitherapy Society,
Vice-President of the conference

Organizing Committee:

- **Nina Ilič**, Institute for the development of empathy and creativity Eneja, Slovenia
- **Gordana Hegić**, Croatian Apitherapy Society, Croatia
- **Maruška Markovčič**, Municipality of Ljubljana, Slovenia
- **Bridget Goodwin**, Australian Apitherapy Association, Australia
- **Stefan Stangaciu**, International Federation of Apitherapy, Romania
- **Stanko Rajić**, Belgrade Beekeeping Society, Serbia
- **Mamdouh Abdulrhman**, Faculty of Medicine, Egypt
- **Trent Balduff**, Bee Here Now, Hawaii USA
- **Tanja Balažic Peček**, Slovenia
- **Midhat Jasić**, Faculty of Pharmacy, Bosnia and Herzegovina
- **Tanja Schleis**, Gimnasium A. G. Matoša, Croatia
- **Loretta Andrade**, India

Scientific Committee:

- **Gordana Hegić**, Croatian Apitherapy Society, Croatia
- **Mamdouh Abdulrhman**, Faculty of Medicine, Egypt
- **Fani Hatjina**, APIMONDIA's Scientific Commission on Bee Health, Greece
- **Stefan Stangaciu**, International Federation of Apitherapy, Romania
- **Zorica Plavšić**, The first international association of apitherapist health workers - ApiMed, Serbia
- **Janko Božič**, Faculty of Biotechnology, Slovenia
- **Rok Kopinč**, Medex, Slovenia



Abstracts



Introduction to the world of apitherapy for children and apipedagogy

Nina Ilič

Institute for the Development of Empathy and Creativity Eneja, zavod.eneja@gmail.com

Abstract

One can find quite a lot of professional literature on the subject of apitherapy, less on apitherapy for children. Apitherapy varies widely around the world, either in terms of legal status or practice. When it comes to children, it is all the more important that it has a good reputation in the public. Deductive and inductive approaches to the description and synthesis of sociological and evaluation methodology are also needed for this purpose. Apitherapy for children requires a great deal of responsibility, which the apitherapist can only realize by respecting the principle of professionalism and other principles. In addition to the professional enrichment of the field of Apitherapy for children and Apipedagogy, with this conference, we strive to raise professional culture or awareness in the field of apipedagogy and apitherapy for children in Slovenia and around the world, with the main sustainable goals remaining the well-being of children and the well-being of bees.

In apitherapy for children, different profiles of science meet, among which food, pharmacy, and medicine stand out the most. In Slovenia, pedagogy is an important branch of science related to apitherapy, as we were the first in the world to introduce professional apitherapy in kindergartens and schools in cooperation with the public administration. Systematic support in the form of the network of API kindergartens and schools APIS RETIS is needed to ensure professional support and safety.

The current practice shows great added value for both children and educators and applies to other environments. Based on the above facts, it can be concluded that apitherapy for children in Slovenia stands out in terms of development on a global scale, while it would be necessary to devote more professional guidelines (mainly methodology and the aspect of official medicine regarding apitherapy in general) to the field of apitherapy for adults as well.

Keywords: apitherapy, children, apipedagogy, bees, health.

Apitherapy for Children in China

Dr. Bridget Goodwin

Australian Apitherapy Association, bridget.goodwin@gmail.com

Abstract

Apitherapy, or the use of bee products is 4000 years old in the context of Traditional Chinese Medicine (TCM). In China, many bee products are used for medicine and TCM is practiced in the mainstream modern hospital system alongside what the West calls “conventional” medicine. In Chinese hospitals, it is not unusual to see a TCM clinic down the corridor from Oncology, and other mainstream western medical treatments. The Chinese medical system reveres TCM and its practice. The use of TCM herbs and practices is well supported by the Chinese government and is well recognized by the Chinese people who are familiar with its power and efficacy. This presentation focuses on one such TCM clinic at the Huizhou First Hospital, in one of China’s main regional cities. In particular, this presentation shows the work of Dr Chen Wen Bin, who is an acclaimed TCM practitioner who has successfully incorporated apitherapy into the daily practice of treating patients at Huizhou First Hospital. Dr. Chen heads a team of TCM doctors who offer apitherapy, including what the Chinese call “bee needle” or Fengliao as part of the TCM treatments that include acupuncture, moxibustion, cupping, and Tibetan Hot Wax therapies. As a special focus for the Slovenian Apitherapy for Children conference, Dr Bridget Goodwin, Australian Apitherapy Association President, who studied in Chinese hospitals during 2023, made a video showing the frequency of use of “bee needle” in the treatment of childhood illnesses such as rhinitis. This is a revealing and educational display of how apitherapy for children is a daily practice in China.

Keywords: China, apitherapy, children, bee venom.

Beehive Air Therapy for Children

Beate McKenzie

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Abstract

Beehive Air Therapy (BAT), a rather underexplored aspect of apitherapy, leverages the therapeutic properties of beehive air, which is rich in bee propolis, beeswax, and honey aromas. Despite its potential and the availability of patented devices, BAT remains largely investigated and is considered a wellness therapy due to the lack of certified medical devices.

The scientific discourse on BAT is minimal, creating opportunities for innovation. Jürgen Schmiedgen, a certified organic “BIO” beekeeper and apitherapy consultant, embarked on a journey to refine BAT after acquiring devices from Hans Much, the owner of "Api Air." Recognizing room for improvement, Schmiedgen meticulously studied the technology used and the discernible, positive impacts of beehive air. The results of his efforts materialized in a medically certified and patented beehive air device for the European market in 2019. In 2016, the first BAT Centre was established in Thermalbad Wiesenbad, Germany. Two years later, Professor Dr Karl Speer from the Technical University in Dresden, Germany, conducted a pivotal scientific study to identify the components within beehive air.

The presentation provides a comprehensive overview of the benefits of beehive air therapy, particularly for children. It covers various aspects, including types of treatments, symptoms addressed, usage requirements, and scientific studies supporting the therapy. The document also details apiary and beekeeping standards necessary for effective therapy, the medical process involved, patient experiences, and outcomes from treatments. Notably, it highlights the therapy's effectiveness in treating conditions like hay fever, asthma, and COPD, emphasizing children's unique experiences and improvements following the therapy.

Keywords: beehive air therapy, beehive product, beehive air components, respiratory conditions, apitherapy.

Effect of bee products on viruses that cause upper respiratory tract infections in children

Prof. Sibel SILICI

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sibelsilici@gmail.com

Abstract

Upper respiratory tract infection (URTI) is one of the very common diseases and a major health problem with its high incidence and economic costs. Disease limits children's daily activities such as eating, sleeping, and playing and causes them to stay back from school. Additionally, the sleep patterns and workforce of the parents of those children are affected negatively as well.

This research, it was aimed to investigate the effect of a bee products mixture (BPM) consisting of honey, royal jelly, and propolis on children 5-12 years of age, with the diagnosis of URTI. The study scheme was a randomized, double-blind, placebo-controlled trial. The research was conducted on 200 children 5-12 years of age, who have the main symptoms and signs of tonsillopharyngitis such as fever, sore throat, and dysphagia at the Erciyes University Mustafa Eraslan-Fevzi Mercan Children's Hospital. In the samples taken from the throat of patients, the most common viruses were *Moraxella catarrhalis* (44.5%) and Rhinovirus (18%) species, respectively. As a result, in the groups who were treated with honeybee products numerically lower scores were seen on the 2nd day. It was remarkable for the Vir-BPM group on the 4th day. Following the 4th day significant low scores were seen in Vir-BPM in comparison with Vir-P and bacterial groups.

Keywords: children, URTI, viruses, propolis, honey.

Propolis Greit 120 and HuIFN- α N3 show anti-influenza virus activity *in vitro**

Bratko Filipič¹, Klemen Rihar² +

Dunja Exel Gregorič³, Hrvoje Mazija⁴, Adriana Pereyra⁵

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^{2,*} The presented research is dedicated to the kind memory of Dr. Klemen Rihar

Abstract

The Influenza virus affects the respiratory tract in humans, causing a range of distinct manifestations including fever, nasal secretions, cough, headaches, muscle pain, and pneumonia, which could become violent and severe. Influenza A viruses remain resistant to Amantadine and Rimantadine with high levels of Oseltamvir. Therefore, there is a need for constant improvement of drugs active against resistant Influenza viruses. Propolis has anti-influenza activity both *in vitro* and *in vivo*. Human leukocyte interferon (HuIFN- α N3) is a multi-subtype protein that displays activity against Influenza A and B viruses.

In this study authors elucidated the anti - Influenza activity of the mixes of Greit 120 and HuIFN- α N3 at different ratios: 1:1, 1:2 and 2:1. Greit's 120 polyphenols and HuIFN- α N3 were characterized by RP-HPLC. Influenza A and B viruses were separately added to the LLC-MK2 cells treated with Greit 120 and HuIFN- α N3 alone or in ratios 1:1, 1:2, and 2:1. Plates were incubated and cytopathic effects were determined. The best results of ID₅₀ were obtained with the mix of 10% Greit 120 and HuIFN- α N3 1:2, showing ID₅₀ at 12 ± 0.2 μ g/mL for Influenza A and 19 ± 0.6 μ g/mL for Influenza B viruses. When comparing the anti-influenza activity of Greit 120/HuIFN- α N3 with that of Ribavirin, it was found that 1:2 was the optimal ratio for Greit 120 /HuIFN- α N3 (0.5 and 0.6 for Influenza A and B). This new formulation of WSP (Greit 120) and HuIFN- α N3, showing better anti-influenza activity, will improve its application in flu infections *in vivo*.

Keywords: Great 120, HuIFN- α N3, Ethanol extract of Propolis, Influenza viruses, Antiviral activity, Tissue culture.

Honey as an alternative treatment of bronchial asthma in children

Mamdouh Abdulrhman

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Abstract

Based on the facts that honey, as a natural substance produced by honey bees, has anti-microbial, anti-oxidant, immune-modulator, prebiotic, and probiotic effects, this study summarizes the therapeutic effects of honey, as a sole treatment, in the treatment of childhood asthma.

More than 700 children suffering from acute bronchial asthma were included in this study, which began in 2000 and still going on. The severity of asthma attacks ranged from mild to moderate in 650 patients, whereas in 50 patients the attacks were initially severe. The ages of the patients ranged from 3 months to 14 years, and they were of both sexes. All patients received oral honey in a daily dose of 5ml honey/kg body weight, divided into four doses. In addition, honey nebulization was given when there was no response to oral honey when there was respiratory distress or to speed recovery. Honey, oral honey with or without nebulization, was the only treatment given to those patients; neither corticosteroids nor bronchodilators were given. However, the majority of patients with severe attacks (42 out of 50 patients) were admitted to the hospital to receive oxygen and intravenous fluids in addition to honey nebulization.

Results: No toxicity or allergic reactions happened in any of the patients. Honey therapy especially nebulization resulted initially in negative symptoms in the form of increased frequency of cough, which was sometimes associated with vomiting, chest wheezes, and/or respiratory distress. All these negative symptoms were considered “false negative” or “misleading reactions” because they were always transient and followed by improvement. None of the patients required assisted ventilation. The severity and duration of these reactions were usually proportionate to the severity and duration of the initial attack of asthma. The recovery time, defined as the number of days from initiation of honey treatment to when no more symptoms are present, ranged from 3 to 15 days, with a mean of 5.5 days. Around 10 of 700 patients (~1.5%) discontinued honey therapy because of the persistence of severe exhausting cough. In conclusion, in a large group of children, honey therapy was found to be an effective and safe alternative treatment of acute asthma in children.

Keywords: honey, children, asthma, nebulization.

Buzzing into the World of Bees for Young Minds

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Abstract

For the second part of this school year The Association ApiMed Srbija, prepare a special project designed for 2 preschools and 2 elementary schools - first fourth-grade students (ages 7-10) to explore the fascinating world of bees. This program goes beyond traditional teaching methods, incorporating interactive activities, artistic expression, and celebrations to instill a profound understanding of bees, their vital role as pollinators, and the benefits of the products they provide.

Program Highlights:

1. Educational Workshops: Engaging workshops will cover the life cycle of bees, their role in pollination, and the importance of bees in maintaining a healthy ecosystem.
2. Artistic Expression: Children will have the opportunity to express their creativity by drawing bees, bee hives, and other related elements, to solve the maze (labyrinth),
3. Songs and Rhymes: Catchy and informative songs will be introduced to make learning about bees enjoyable and memorable. These musical elements not only entertain but also reinforce key concepts.
4. Short Brochure: A visually appealing brochure will be created to summarize the key points of the program, serving as a take-home resource for students and their families.
5. Beekeeping Demonstrations: Where feasible, live demonstrations of beekeeping practices may be included to provide a firsthand look at the intricate world of beekeeping.
6. Bee Day Celebration: A special event dedicated to celebrating the world of bees. Activities may include hive tours, honey tastings, and interactive demonstrations to showcase the wonders of apiculture.
7. ApiTherapy Day: Emphasizing the health benefits associated with bee products, ApiTherapy Day will educate students about the positive effects of honey, propolis, and other bee-related substances on human well-being.
8. Health Day: Integrating the concept of bee-related health benefits into a broader health context, this day will explore the interconnectedness of nature and well-being.

Our practice aims to not only impart knowledge about bees but also to instill a sense of appreciation for these essential pollinators and their contributions to the environment and human health. Through a blend of education, creativity, and celebration, this program creates a memorable and impactful learning experience for young minds.

Children's first contact with bees

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Abstract

In a big city like Belgrade, where buildings and roads have occupied a large part of the green areas, people have simply lost contact with nature. This is then passed to the children, so we end up in a situation where children aged 5/6 believe that honey is produced in a store. Of course, we caricatured a little, but the bottom line is that they are not familiar with the world of bees.

Our program, which is held in the Honey Garden as part of Silosi Belgrade, gives children the chance to experience the world of bees and learn more about this noble creature. During the warm months (May-September), Belgrade kindergartens and children from primary schools come to us for a two-hour education.

We start the program with a relaxed talk where our goal is to see if any of the children have a phobia of bees. This turned out to be a good strategy because at the very beginning, they become calm and the rest of the meeting is spent in a nice atmosphere.

Kids can learn about various topics from the bee world and flowers and honey until it is time for the interactive part of the session. For the safety of the children, we divide the group into two groups, where one group wears kids' bee suits and goes around the beehives, and the other part studies the glass beehive in search of the queen. We finish the session with honey tasting and time for questions.

Even after a few months, the children still talk about bees, the ones with fear overcome it, while it happened to us quite a few times that children who didn't eat honey after our education started to consume it.

Keywords: education, children, nature.

eTwinning Project "Be Like a Bee"

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Abstract

The eTwinning project "Be like a bee" was implemented in the "Butterfly" group at Duga Kindergarten. Several schools and kindergartens from eight European countries and 28 teachers participated in the project. With this project, we wanted to encourage the development of students' interest in nature and the exploration of its flora and fauna. Through a series of activities, children became aware of the importance of responsible behavior towards nature, especially bees. The activities were designed to raise children's awareness of how much bees contribute to the growth of plants, what bee products are, and how they are used to boost immunity and health. We wanted the children to actively use the acquired knowledge in their parents' homes and kindergarten. The children drew bees, built hotels for insects, planted a garden of single-fruited plants for bees, met beekeepers, and shared their experiences through the eTwinning portal with others. During the project, we cooperated with the Croatian Apitherapy Society, and parents were also involved in the activities and expressed great satisfaction with the implemented project. I received feedback on the work through a survey conducted with parents. Parents noticed positive changes in children's behavior, from the beginning of honey consumption to greater interest in the flora and fauna that surrounds us. Since the children are still interested in the life of bees and exploring nature, this year we included a new project called "Sun for Breakfast" in the group's work plan and program.

Keywords: bees, research, nature, healthy habits.

Education to the development of apiculture in elementary school

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Abstract

The primary school of King Tomislav Našice, as an educational public institution in addition to the regular education program, is involved in a series of projects aimed at broadening students' perception of life and providing them, according to their wishes, with the opportunity to acquire new skills and knowledge.

With the cooperation of Mihaela Pokrivka, Ana Marošević, and Anita Dragić, we achieved excellent results by holding creative workshops with studies on the world of bees.

The classroom students with teacher, Mihaela Pokrivka, expressed their desire to stay in nature as much as possible after the withdrawal of the measures that occurred with the pandemic. The students were able to create a school flower garden with honey plants that are visited by bees from the educational apiary. Through conversation, education, and workshops, we noticed that students are interested in the world of bees and the creation of bee products. We integrated these contents into the natural history area of the curriculum through various curricular and extracurricular activities. The goal is to develop children's awareness of the mutual connection between plants and bees, to protect and preserve plant and animal life (bees), and to see the importance of bee products for human health.

Keywords: apiculture, bee products, apitherapy, education.

Green Library for Green Zagreb: Little School of Beekeeping at Savica Library

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Abstract

This presentation aims to give an overview of various activities related to bees which were done in the Zagreb City Libraries within the Green Library for Green Zagreb project and the collaboration of the Savica Library and the Croatian Apitherapy Society, with a special emphasis on the implementation of the Little School of Beekeeping, an original program of the Society's President Gordana Hegić, PhD.

The Green Library for Green Zagreb project has been implemented in the Zagreb City Libraries since 2017. It is dedicated to the promotion of green literacy and critical reflection about environmental topics and it was developed from the Green Library program of the Savica Library, one of the libraries in the Zagreb City Libraries network. Program contents on the topics of bee colonies and products have been regularly held within the project, and the most systemic collaboration, since 2021, has been between the Savica Library and Gordana Hegić, PhD of the Croatian Apitherapy Society.

There were several lectures, workshops, and an exhibit, while the Little School of Beekeeping was held at the Library in 2023, consisting of a series of pedagogical lectures and workshops for junior primary school students. During the School the students learned, in a professional and easy to understand way, about numerous curiosities about bees' lives and their products, and they could sample honey, make honey mixtures, and cosmetics using bee products.

The Little School of Beekeeping at the Savica Library had a purpose to encourage development of students' green literacy - informing them about the necessity of environmental protection and the importance of bee colonies for sustainable development,

which is under the fifteenth goal of the UN Sustainable Development which emphasizes the importance of halting biodiversity loss, protection of endangered species, and prevention of their extinction.

Keywords: Green Library for Green Zagreb, green literacy, Little School of Beekeeping, public libraries, Zagreb City Libraries.

Apitherapy as a growing added value of the small town

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Abstract

Apitherapy as a growing added value of the small town contains the presentations of the first excellent steps towards achieving the importance of apitherapy as an additional support to official medicine and at the same time expanding tourism.

The abstract:

- Mežica, a town with great beekeeping history (beekeeping museum and the Bee path (route))
- Certified apitherapist, API-tourist guide, and beekeeper
- Apitherapeutic apiary
- Beeing a part of the Apis Retis
- Visiting kindergartens and schools to recognize apitherapy and learn population about correct behavior around the apiary
- Organization of the API events at the apiary (individuals, groups)
- Excellent education and support by Apis Retis and Nina Ilič
- Develop the apiturism in several directions.

Keywords: bees, urban bee walk, tourism, apitherapy.

The story from Lič

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Abstract

The Medun Fest is traditionally dedicated to the indigenous Goranian forest meduna, a nutritionally extremely rich foodstuff, and is held in the town of Lič in the municipality of Fužine. Medun or mediljkovac is a kind of superfood of Gorski Kotar because it contains, among other things, antioxidants, amino acids, mineral substances, and folic acid and is also rich in iron. On Saturday, September 2, 2023, the 4th Medun Fest was held. As part of the event, a part of the apitourism offer for our youngest was presented for the first time. In cooperation with the Croatian Apitherapy Society, several hours of activities were held for visitors of different ages. From an interesting lecture about a working day of a worker bee to a photo exhibition that describes the beauty of this landscape that a bee sees when it leaves the hive to collect nectar, honeydew, pollen, propolis or water, all the way to tasting honey with the creation of a comic book, a knowledge quiz, the sharing of picture books for children who describes all bee products and their effects on the human body by the author Gordana Hegić, painting a beehive in which the bees will be placed and next year the children will have the opportunity to taste honey from "their" painted beehive, a role-playing game where children are worker bees and collect pollen grains in the meadow for several hours of education was well received and will be repeated next year. We would certainly look forward to hosting as many children as possible and developing this part of the touristic offer for children into a year-round activity as part of our tourist offer.

Keywords: fir, apitourism for children, apiculture.

Api-Nutrition for infants and children

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Eng. Rodica MARGAOAN, PhD., CSI

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Abstract

The child's diet lays the foundations for his development as an adult, from the point of view of health but also of the development of the body. The introduction of bee products: pollen, bee bread, royal jelly, queen larvae, or drone larvae, comes with a complete supply of macronutrients, micronutrients, and phytonutrients, which are very important in the proper nutrition of the human body.

When we start to introduce bee products into the child's diet, in what form and in what quantities, I will share with you my experience of over 15 years and the results of this experience, to advance together in the knowledge of the special help given to the human body, of bee products as food.

Even I am amazed at times, by the power of complete nutrition of the body with bee products and the recovery of the body's functions or the solution of its functioning where medicine no longer has solutions.

The introduction of bee products in children's diets is the biggest possible investment in the formation and growth of a functional, healthy body.

Keywords: health, children's diet, nutrition.

Bee products for children. Clinical cases.

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Abstract

Children's needs are very specific and their response to a health condition is significantly faster than adults. Bee products are lately attracting the attention of consumers, but also of researchers due to their marvelous characteristics: significant effects on human health and nutrition. For example, raw honey not only replaces sugar in daily diet but offers a variety of phytonutrients that can play important roles in maintaining good health: enzymes, probiotics, antioxidants, etc. Propolis has very good antimicrobial and anti-inflammatory properties and can be used in various forms: liquid extracts, aerosols, and suppository. Royal jelly and larvae triturations are very good for body and brain development, immune problems, premature babies, etc. Introducing bee products into children's routines helps to maintain a good state of health and harmonious development. Their taste is well accepted and appreciated by kids, which is important for good compliance. The use of bee products has shown very good effects in boosting immunity: children who start in kindergarten or school are protected from recurrent infectious. This presentation will show some clinical cases where different bee products were very effective.

Keywords: Apitherapy, immunity, bee products, children.

All the benefits of bee products on children's health

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Abstract

Honey has been used in human nutrition since ancient times and is known as the food of the gods. Today, it is underrepresented in the diet considering its properties, which are: antibacterial, bacteriostatic, and anti-inflammatory. It is considered one of the most digestible and useful foods as well as an excellent source of antioxidants. It contains simple carbohydrates that can be easily used to generate energy, and as such is very well known to athletes. The share of glucose and fructose monosaccharides is 70-80%, the share of moisture is 16-20%, and the rest is made up of vitamins, minerals, enzymes, and flavonoids, it does not contain lipids. The amount of vitamins varies depending on the type of plant. Of vitamins, it has the most vitamin C and B group of minerals: iron, copper, phosphorus, calcium, magnesium, sodium, and potassium. It has been proven that darker types of honey have higher antioxidant activity and are richer in mineral substances. Honey is a high-energy food and considering all the benefits it possesses, it should be consumed rationally. It is not recommended for children under one year of age, because honey may contain spores that can cause botulism in the infant's digestive system, which is not yet resistant. Honey is used in various medical conditions such as hay fever, colds, and coughs in the treatment of wounds, supports gastritis, improves circulation, stimulates mental activity, and increases immunity. It is also used for prevention as a nutritionally valuable food. Few scientific studies have been done in vivo to scientifically confirm all the benefits. Studies were conducted on the topical application of honey and dose effectiveness on cough in children and a randomized control trial on the severity of oral mucositis and pain compared to placebo in children with leukemia receiving intensive chemotherapy versus standard treatment. The results show that children tolerate honey well and it can be used as an alternative medicine especially in low and middle-income countries because it is economical. The first sure step towards a healthier lifestyle is to introduce honey into the list of diet plans.

Keywords: honey, prevention, treatment, health, diet plan.

The effect of royal jelly on hormones during adolescence

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Abstract

Royal jelly is a unique food that is given in the honey bee colony from the egg to the maturity period of the queen bee, and only during the egg period of the other castes. Although both develop from a fertilized egg, the morphological and physiological differences between the worker bee and the queen bee are the result of royal jelly feeding. Royal jelly, which has many beneficial biological activities, has gained importance as a functional food. Scientific research has shown that royal jelly is effective on growth and sex hormones.

Royal jelly is a bee product that contains hormones as well as rich nutritional elements and biomolecules. For this reason, the effect mechanisms of royal jelly on the endocrine system should be considered in many aspects. Its effect on hormonal changes, especially during adolescence, should be taken into consideration, and hormonal changes that will occur in male and female individuals should be investigated. Gynecomastia and early menstruation are just some of these effects.

These studies generally focused on sperm characteristics and their effects on testosterone levels in infertility. Its effect on hormonal changes, especially during adolescence, should be taken into consideration, and hormonal changes that will occur in male and female individuals should be investigated.

Keywords: royal jelly, hormone, adolescence, infertility.

Properties of honey and the mechanism of strengthening the immune system

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Abstract

The human digestive tract is the most important organ in maintaining homeostasis, and especially in strengthening the immune system. Honey is a significant source of bioactive medicinal ingredients, which bees introduce into honey through nectar, pollen and honeydew. In addition to the content of polyphenols, alkaloids, glycosides and other ingredients, honey also contains various oligosaccharides, which act as a prebiotic. These are mainly plant polysaccharides or other substances poorly digestible by human enzymes, which feed and nourish probiotic organisms, as the most important factor in strengthening immunity. In the first year of human life, the digestive tract contains about 200, adults 500-600, and elderly people about 300 probiotic bacterial species. Daily consumption of honey stimulates the metabolism of intestinal biota (probiotics), significantly reduces the risk of digestive disorders, and at the same time strengthens immune system. On this basis, the antibacterial and anti-inflammatory effects of honey, as well as the relief of symptoms of constipation and ulcerative colitis, are explained.

Numerous studies show that honey acts as a prebiotic, specifically by promoting the population of probiotic bacteria, including *Bifidobacterium* spp. and *Lactobacillus* spp. Combinations of honey and probiotics have the potential to formulate new preparations important in apitherapy that can help in the treatment of various diseases of the digestive tract in both children and adults.

Keywords: Properties of honey, strengthening of the immune system.

The importance of analyzing products used in apitherapy

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Abstract

In recent years, apitherapy has become known to a wider circle of consumers as a complementary method of preserving health, preventing diseases and improving the quality of life. In apitherapy, all bee products are used in combination and continuously, and it is extremely important that they are healthy and of maximum quality. Laboratory analyzes of bee products need to prove their health correctness, because only such products can be used for apitherapeutic purposes. In order for bee products to achieve their maximum apitherapeutic effect, their quality is certainly important, i.e. it is important that their biological activity is preserved. In Croatia, there is a quality control system for honey, which is marked with a special label and packed in a national honey jar, but the product does not pass the health safety analysis. Given that the concept of quality does not mean that the product is healthy, the Croatian Apitherapy Society has, with the aim of protecting consumers of apitherapy products and services, protected the trademark by which we confirm that the products and services used in apitherapy are maximally safe and controlled for users. With the trademark, we protect not only users who consume plowed bee products, but also users of apiinhalations, providers of education services where the educators themselves are adequately educated. For the reasons mentioned, as well as the fact that there are more and more apiaries in Croatia that provide education and reception of children almost without any safety measures (responsible person in the apiary, a special first aid kit and education about possible complications during bee stings), the Croatian Apitherapy Society is in September 2023 organized training for about 20 participants who are trained and certified for safe work with children in the apiary.

Keywords: Croatian Apitherapy Society, apitherapy, bees.

Propolis extract – quality analysis and use in semisolid formulations

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Abstract

This study aimed to produce propolis liquid and soft extracts, assess quality, and release bioactive compounds *in vitro* from semisolid formulations with soft propolis extract. Propolis liquid extracts were prepared by maceration method using solvents 40 and 70 % (V/V) ethanol solutions when propolis concentration was 5 and 10 %. Propolis soft extract was produced by evaporation the liquid extract of propolis 10 % was obtained with 70 % ethanol until it became thick consistency.

Determination of total phenolic compounds in propolis extracts was performed using the Folin-Ciocalteu reagent and analyzed with a spectrophotometer at 765 nm wavelength. Total phenolic compounds were expressed in p-coumaric acid equivalent. The results showed a trend of a larger total quantity of phenolic compounds with increasing ethanol and propolis concentrations. Research showed that the largest quantity of active compounds was extracted using 70 % ethanol solution as an extranet.

Propolis soft extract (3%) was introduced to semisolid pharmaceutical preparations: ointment and w/o cream for assessing the impact of semisolid base on the release of phenolic compounds *in vitro*. The results show the differences were statistically significant at $p < 0.05$. A bigger amount of phenolic compounds was released from ointment than from cream. The choice of semisolid base influences the release of phenolic compounds from formulations and the following penetration to the skin.

Keywords: propolis, analysis, skin, extract, apitherapy.

Shantala Massage- proposal of massage with honey benefits

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Abstract

Honey is a bee product with a high nutritional value and regenerative properties which is used in skin care. A high content of carbohydrates and the presence of fruit acids, vitamins, and trace elements are responsible for its beneficial impact on the skin. Through osmosis, microcirculation in the skin tissue is stimulated, resulting in better nutrition and oxygenation. Thanks to this, metabolic processes are also stimulated, leading to the elimination of harmful metabolites and increased regenerative processes. In addition, honey has hygroscopic properties, absorbing metabolites and causing detoxification of skin tissue. Therefore, honey is applied externally and plays a role as a humectant during massage. Honey massage is a combination of massage with the beneficial properties of honey. It is recommended as relaxation and detox for highly stressed people, but it brings other benefits for health such as a positive effect on the nervous system, reduction of fatigue, stabilization of sleep, removal of pain and inflammation in joints, post-traumatic spinal injuries or muscle as well as eliminating neuralgia. Therefore, honey may be proposed as a lubricant in Shantala massage, a type of massage recommended for children. This type of massage with honey may effectively reduce muscle tension and vulnerability to cold, and enhance the child's immune system. Moreover, during the massage, the skin's superficial receptors are stimulated, helping to initiate the baby's physical development. Shantal massage makes falling asleep easier and relieves the colic pain in children as well as brings relaxation and calm down during the day. Indications and contraindications for Shantala massage with honey were collected and the guidelines with the main technique of this massage were developed.

Keywords: massage, children, Shantala massage.

Ancient Medicines for Today's Children

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Abstract

Today, it seems that there are pharmaceutical prescriptions for every ailment one can imagine. I had once been caught up on the treadmill of pills after being overprescribed for ADHD. I, like many other people, have turned towards a homeopathic approach to provide some resolve to the anxieties and lack of structure that come with having a brain wired that way. If there is one thing that being a pollinator steward has taught me, its that bees do it best.

After being inspired by the history of honey as a medicine, I began infusing honey with other natural herbs, roots, or foods such as adaptogenic mushrooms. Creating and sharing these concoctions with others at educational events or in-person booths, I have had the opportunity to administer adaptogenic mushroom honey to people of all ages, including children. The use of bee-related products in youth-centered settings is impactful in multiple ways. The youth would receive 2 tbsp of infused honey through a 'honey stick', or sealed straw. These are administered by their parents, their school teachers, or myself with parental permission.

In my experience, I have found that children benefit massively from bee-related products. I have had some become complete nature enthusiasts after ingesting mushroom honey, and I have also had kids smile and nod if I asked them "Did that take your anxiety away?".

Some expected implications are the direct correlation between an individual child's exposure to bee-related products and their improved mental and physical health. Another implication would be that there is no 'one size fits all' in terms of bee-related products like infused honey; specific infusions for specific desired outcomes. The practical limitations of finding any data points to support these implications come in the form of gatekeepers – parents and or educational institutions.

Keywords: mushrooms, children, bees.

Bee products in the diet of pregnant women, nursing mothers, and children

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Abstract

There are more and more modern discoveries and scientific knowledge about the rich content and precious properties of natural bee products, which scientists around the world come to with the help of laboratory and clinical research. The aim of the paper: To present our long-term observations and results with apitherapy. Working methods: For married couples who could not have children for years, royal jelly and honey are included. Pregnant women with risky and healthy pregnancies were given royal jelly and propolis along with honey. Due to the risk of botulism, newborns use honey through breast milk until the end of their first year of life. Preschool and school children took honey and propolis. The recommended daily amount of honey is 1-2 grams per kilogram of body weight, royal jelly 30 milligrams per kilogram of body weight, and 1 drop of propolis tincture per kilogram of body weight, divided into 2-3 intakes per day. Apitherapy improved the fertility of men and women, that is, the quality of sperm and eggs, and in 80% of cases, the desired conception and birth occurred. In women with spontaneous and habitual terminations of pregnancy - the pregnancy proceeded without complications and ended with a happy and healthy birth. Breastfed newborns progressed well without respiratory infections. Preschool and school children had healthy teeth and bones, good blood count, good digestion, mood, more intensive growth and development, fewer respiratory infections, excellent concentration, memory, and peaceful, quality sleep.

By consuming bee products as high-value unprocessed foods, many substances are introduced into the bodies of pregnant women, nursing mothers, and children, which are often insufficient in a diet rich in processed foods. In this way, the homeostasis of the organism is encouraged and maintained, which is the basic prerequisite for health and disease prevention.

Keywords: apitherapy, pregnant women, children.

Experience of honey bee colony as a model for collective decision-making

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Abstract

Research of honeybee life was often strongly motivated by general questions of human society development. The social life of honeybees looks very rigid because we can't observe some major changes in a way of organization in a bee colony throughout our lifetime. Although from an evolutionary point of view, there was a development from solitary life to eusocial life as we know now in honeybees. Some basic mechanisms keep honeybee colonies together in a dependable society. Most of that can be attributed to chemical communication by the secretion of pheromones by the queen, brood, and workers. In addition, bees have specially developed waggle dance communication which enables sharing of and selection between different resources. The colony-level decision is based on interactions between individual workers and not some central physical information storage. Bees use different levels of narrowing of the selection of the resources. Water, plants resins, and pollen are more widely selected, but nectar and honeydew resources can be narrowed to the most profitable resources. In the case of a new hive location during swarming behavior they practically achieve total consensus. Narrowing of the selection can be linked to the specific needs of the colony, potential discrimination of the quality of the resources, and rewarding mechanisms for the resource. If there is a clear reward like sugar concentration in the case of nectar and honeydew resources, selection can be simplified inside of the hive without rechecking of the quality of the field by the recruits. In the case of a new hive, it seems that rechecking and repetitions of specific locations' information is critical to achieving strong quorum sensing with the high majority in the final swarm level decision which looks like, from the observer site, a full consensus. Honeybee colony gives as opportunity to develop observations to study the mechanism of decision-making based on collective information exchange. The basic tool is observing waggle dance behavior in different foraging activities. This can be done using an observation hive during the whole season of foraging activities. The possibility of observing decision change inside of the colony for foraging activity will be demonstrated and discussed.

Keywords: bees, collective decision-making, education.

The Influence of Beekeeping Club on the Health and Comprehensive Development of Primary School Students

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Abstract

In Slovenia, beekeeping clubs are held in many primary schools, secondary schools and conservation work centers. The organization and implementation of these clubs involve school teachers, the Public Advisory Service in beekeeping, and experienced beekeeping mentors. At the Primary School Osnovna šola Ob Rinži Kočevje, the beekeeping club is held as part of the Extended Program. Students acquire knowledge and skills through various activities that include theoretical knowledge and practical skills. For practical work in the field, we have a school teaching apiary and access to a regional apiary.

We are aware that beekeeping clubs play an important role in informing, raising awareness and creating a positive attitude towards bees and beekeeping, tradition and the preservation of nature and health. In our research, we focused on the impact of beekeeping clubs on the development of psychosocial skills, attention, independence and responsibility. We asked ourselves what increases students' motivation to attend the club and how individual students respond to the instructions and various activities at the beekeeping club. We monitored the age and characteristics of some students. The methods used in the research are observation, interview and survey.

We found that the majority of students who have attended the beekeeping club for several years in a row had a positive experience working in the apiary outside of school and a positive example of an adult. We were surprised that students who are hyperactive in class enroll in the beekeeping club. Most students are inquisitive and manual dexterous. Students with autism spectrum disorders and quiet and reserved students cooperate well. Students are most motivated by practical work in the apiary and research into the use of bee products in connection with apitherapy.

A crucial aspect of the beekeeping club is the active involvement of students in co-creating the learning process. Both the teacher and the beekeeping mentor must possess well-developed transversal skills and expertise to facilitate a dynamic and engaging educational experience.

Keywords: education, school, students, children, bees.

The role of the teacher in the secondary professional program Preschool education and Apipedagogy

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Abstract

The professional program of preschool education in secondary schools is the foundation for the profession of assistant educator. In this role, the teacher not only focuses on the transfer of knowledge and skills, but also serves as a guide, inspiration and role model, guiding students to think and use modern approaches such as Apipedagogy.

Providing quality education and taking care of children's development requires a wider range of skills, such as pedagogical knowledge, understanding of child psychology and the ability to adapt to the diverse needs and personality of the child. Professional subjects such as pedagogy represent a fundamental tool that allows future educators to expand their understanding of child development, learning approaches and methods of educational work. Apipedagogy brings an innovative approach that encourages positive behavior and establishes healthy relationships.

Teachers in the secondary professional preschool education program play a key role in encouraging students to understand and apply the concepts of apipedagogy in their future work. They can achieve this by combining theoretical knowledge with practical experiences (practical training with work), which emphasize the importance of positive interactions, empathy, and adapting educational approaches to individual children. In addition, in the final year, students can prepare a practical performance on the topic of apipedagogy, which will encourage them to reflect on their approaches, relationships, and ways of communicating with children. This enables them to develop skills that will benefit them in their future career. Teachers as mentors have the opportunity to influence future educators at an early stage of their education. With their example, support, and guidance, they can encourage students to become aware of the importance of api-pedagogy and inspire them to integrate it into their future work with children. The professional preschool education program is not only a place for acquiring theoretical knowledge but also a platform where future educators are formed, who will positively influence the holistic development of preschool children with their dedication, knowledge, and use of modern pedagogical approaches such as apipedagogy.

Keywords: mentor, education, apipedagogy, teacher.

Improvisation and the Theater by Keith Johnstone for the purpose of educating students on the proper way of conduct at the Apiary

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Abstract

Keith Johnstone, a pioneer of improvisational theatre, wrote extensively about “status games.” He claimed that everything we do is a status game, whether or not we are conscious of it. All our actions either raise or lower our own status in comparison to others, the impact of which depends on the context. As educators we can apply a similar concept of status to the work in the apiary - either in our relationship with bees or in the relationship between teacher and student when visiting the apiary. Furthermore, using the concept of "status games" seems to be the perfect method when explaining the proper way of conduct in the apiary to the students. Throughout the status games, different situations that can happen at the apiary can be shown to the students but in a safe classroom environment. In addition, these situations can then be commented on in an open student discussion and new solutions can be offered through a change of status/different behavior. In this way, students are taught to be aware of real and possibly dangerous situations at the apiary in a fun way and through playful learning they can be adequately prepared for them before visiting the apiary.

Keywords: Impro-theater, K. Johnstone, status games, safety.

Kindergarten "Magic Forest" - a Sweet Story

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Abstract

We are working hard and we are enjoying ourselves with honey, said the director of Kindergarten Čarobna Šuma from Špišić Bukovica, the first Kindergarten in the Republic of Croatia to be marked with the gold seal of the Croatian Apitherapy Society for participating in the use of honey from local beekeepers. Thanks to the educators, children get to know the wonderful world of bees intensively through play and fun. Educators have designed original activity programs according to the age and interests of the children in each group, and there is certainly interest in further education of educators as well as international cooperation with our Slovenian colleagues. Children have honey at their disposal every day and are happy to consume it. Given the preserved biological activity of honey, an optimal apitherapy effect on children's health, better immunity, optimal growth and development of the child is expected. In addition to the consumption of honey, an education for educators on the safety of children when visiting the apiary was held by Mrs. Nina Ilić, while an education on the life and work of bees was held by dr. sc. Gordana Hegić, who also held education for parents and educators on the topic of apitherapy and bee products. Health and quality control of acacia and flower honey, which is consumed daily in kindergartens, is controlled by the Technological and innovation center of Virovitica and the Faculty of Food Technology in Osijek. They made physicochemical analyses of samples of both honeys, while the Institute for Public Health of Virovitica-Podravina County made a microbiological analysis. Parents, just like their children, enthusiastically accepted this program that develops healthy habits from an early age. The program was supported by the mayor of municipality Špišić Bukovica, who showed that he really cares about the youngest citizens.

Keywords: kindergarten, bees, healthy product, apitherapy, apiculture

Apiaromatherapy is the most effective help from nature

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Abstract

Propolis cream ® was created for hydration, care, and regeneration of skin that has certain irregularities caused by various factors, according to a protected recipe. Almost every day, our skin is exposed to various exogenous influences and it becomes dry, peeling, and red. Various accidents in the form of burns, scratches, or itching are also frequent. In sensitive people, burns from excessive exposure to the sun's rays are also a big problem, with redness and peeling of the skin as a consequence. The propolis moisturizing cream contains propolis and honey, with the addition of chamomile and lavender essential oils. The goal was to produce a completely natural cream without synthetic preservatives, dyes, fillers, and fragrances that will help with various skin problems. The cream has been used in practice for problems with diaper rash, bites, redness of the skin from the sun, scratches, mosquito bites, and chicken pox. Propolis cream has also been shown to help with atopic dermatitis, especially when combined with a mixture of honey and pollen taken orally. In practice, the cream has proven to be effective in cases of burns, peeling skin, redness, and youthful skin prone to acne. Successful results are monitored in direct contact with the product users, by monitoring the actual sales and the quantity of products produced, the awards won, and, most importantly, the satisfaction of the users. Considering that the cream is completely natural and edible, it was also used in veterinary medicine. The feedback from individual users showed a positive effect of the cream on hair loss or peeling and ameliorated the appearance of rough skin on the elbows of dogs. According to the statements of satisfied users, this cream has become an integral part of the natural home pharmacy.

Keywords: moisturizing propolis cream, apiaromatherapy, apicosmetics

Api - package for children and youth

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Abstract

The api-package can combine apitherapy, apiculture, and apitourism in ways that are adapted to children and young people. The idea of this type of presentation or offer was based on many offers in which I have been involved.

Combining these three areas can give children and young people the opportunity to learn about the importance of bees for the environment, ways to care for nature, and the health benefits of bee products. This could also stimulate their interest in environmental protection and sustainable lifestyles.

Practical examples of this type of offer have been developed within the Urban Bee Walks Slovenia, which is a part the international BeePathNet network. The cooperation and networking of all the stakeholders meeting within the api-package is of course of paramount importance here.

Keywords: Urban Bee Walks Slovenia, BeePathNet, api-package.



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