

International conference | Mendel university in Brno

# CANNABIS & SCIENCE IV.

4/18/2018



Mendelova  
univerzita  
v Brně



FAKULTNÍ  
NEUROLOGIE  
U SV. ANNY  
V BRNĚ



magazín  
**Legalizace**



09:30

## Summary of cannabis research at Mendel University

**MVDR. ING. VÁCLAV TROJAN, PH.D.**  
– MENDEL UNIVERSITY

Cannabis research program at Mendel University in Brno is intensively expanding not only in regards to medical cannabis, but also in regards to its industrial counterpart – hemp. Decades of plant physiology research intertwine ideally with practical applications here. Thanks to the legislative changes in the medical cannabis area in the Czech Republic in recent years, we have become an attractive destination for foreign investors interested in research. This is a real and perfect example of transferring technologies in practice. Unfortunately the current situation in relation to the commercial production of medical cannabis does not allow for export to other countries. Making this legislative change would greatly help further increase the investments into research. General research trends primarily include breeding of new strains with varying active substance ratios as well as studying the external factors influencing the production (external factors can have up to 70 percent influence on the content of active substances). A clear advantage of our research is the fact that it is being internally supported by Mendel University in Brno.

10:15

## *Cannabis sativa* in time and with reference to possible phytoremediation

**ING. MARIE BJELKOVÁ, PH.D. – AGRITEC PLANT RESEARCH S.R.O. ŠUMPERK**

The heavy metal contamination of soil is a serious problem caused by intensive farming and industry (mineral fertilizers, composts, sewage sludges). Industrial activity consequently often leads to the accumulation of unwanted compounds in the environment (soil, sediments, water and air). In order to reduce their presence or get rid of them completely, there are various methods of phytoremediation employed, i.e. the use of green plants, agrotechnological procedures and various supplements. One model plant suitable for remediation is *cannabis sativa* (*Cannabis sativa* L.). Currently, there is a substantial interest in growing *cannabis sativa* in the Czech Republic for various basic purposes including the production of natural fibre, organic dry plant matter for industrial or energy-producing purposes, as well as the production of seeds either for direct consumption, or for further processing into industrial or edible oil. Concerning these uses, the capability of *cannabis* to accumulate certain contaminants may be seen as a complication.

10:45

## Medical cannabis research at the Czech University of Life Sciences in Prague

**ING. ANEŽKA JANATOVÁ** – “Yields and stability of main cannabinoids in six chosen genotypes during six growing cycles, extraction, antibacterial activity of cannabis extracts”

**BC. ZDENKA KAHÁNKOVÁ** – “Antimycotic activity of cannabis extracts and essential oils”

**ING. JIŘÍ VELECHOVSKÝ** – “Comparison of organic and mineral nutrients for medical cannabis plants”

**ING. MICHAL OROSZ** – “Polyploidization, micropropagation, cryopreservation”

Medical cannabis research at the Czech University of Life Sciences (ZU) in Prague has started in September 2014. There are several university workplaces currently participating on this research and a new specialized workplace for growing medical cannabis has been opened in the Domažlice region. Furthermore, other renowned Czech research bodies cooperate with us and participate on the research. The aim of our current work is to choose suitable genotypes (according to their yield potential and stable content of main cannabinoids – mainly 9-THC and CBD) that would satisfy the conditions of 236/2015 Coll. and the needs of patients. Another part of the research focuses on the production of various types of cannabis extracts and on the verification of their biological activity against pathogens responsible for skin conditions in in-vitro setting, and, furthermore, to attest their cytotoxicity in human cell lines of colorectal carcinoma and hepatocarcinoma.

11:30

## Interlaboratory comparison of analytical methods for the assessment of phytocannabinoids in cannabis

**MGR. TIBOR BÉRES, PH.D. – CENTRE OF THE REGION HANÁ FOR BIOTECHNOLOGICAL AND AGRICULTURAL RESEARCH**

In 2013, the Czech Republic has become yet another country allowing the medical use of cannabis. An increasing demand for this type of medicine will be most likely accompanied by an increase in the number of laboratories testing the qualities of dried drug. We have been testing commonly available instrumental analytical methods (liquid chromatography-tandem mass spectrometry detection, gas chromatography-flame ionization detection mass spectrometry) from the perspective of the quality of results in terms of main phytocannabinoids asse-

ssments in samples of medical cannabis, as well as hemp. Certain aspects concerning homogenization and samples extraction were also studied.

12:00

## **Standardization of secondary metabolites production in medical cannabis**

**DR. NIRIT BERNSTEIN – INSTITUTE OF SOIL, WATER AND ENVIRONMENTAL SCIENCES, VOLCANI CENTER, ISRAEL**

Of the many medicinal plants with therapeutic potential, Cannabis sativa is, by far, the most promising in the near future for large-scale utilization. However, the inherent chemical variability of the plant's pharmaceutically active secondary metabolites must be addressed before cannabis can be optimally incorporated into agri-hi-tech modern medical practices. This chemical variability can only be controlled and potentially optimized if the underlying regulation mechanisms of the production of the therapeutic compounds are adequately understood. Many of the medically useful compounds produced by plants are the result of the plant response to the cultivation and environmental conditions. Although not completely clear, there is a significant body of evidence suggesting a role for cannabinoids in environmental response. In the talk I will discuss our recent results demonstrating chemical and physiological gradients in the medical cannabis plant, and the potential for their regulation by mineral nutrition and a range of physical and chemical elicitors.

12:30

## **Lunch break**

13:30

## **Mapping the situation: A complex overview of the current shape of medical cannabis in Europe**

**TOMÁŠ SADÍLEK – INTERNATIONAL CANNABIS AND CANNABINOID INSTITUTE (ICCI)**

The number of countries allowing patients to be treated with medical cannabis has been growing steadily all around the world. The reasons for the implementation of these laws vary from patients' pressure to general public interest to the interest of individual governments who recognize the economic potential of medical cannabis. In this talk, we will outline the current situation in regards to the availability of medical cannabis in world powers, such as the USA, Australia or Canada. The medi-

cal cannabis program in Israel and its development until its current shape will be summarized, and there will also be a discussion about the implementation of medical cannabis laws and their success in individual European countries.

14:15

## **Practical experiences with prescribing and using cannabis for medical purposes in the Czech Republic – 2018 update**

**MUDR. RADOVAN HŘIB – CENTRE FOR THE TREATMENT OF PAIN AT ANESTHESIOLOGY AND INTENSIVE CARE UNIT OF ST. ANNE'S UNIVERSITY HOSPITAL IN BRNO**

This lecture will present the data concerning the "availability" of medical cannabis in the Czech Republic since 2015 from doctor's practical point of view, and the way it has actually worked so far – and most likely will work in coming years. We will further recapitulate the basic principles and sources of information in regards to cannabis pain treatment. In the part of the lecture called "How to start cannabis treatment", we will look into administrative tasks and possible software issues. We will also discuss titration algorithms, which were examined by the author, and possible application methods of medical cannabis. At the end the author will sum up what has been done in terms of cannabis treatment during the last, not very favourable year, and he will introduce his plans for the year ahead.

15:00

## **Issues surrounding the implementation of medical cannabis in a large hospital**

**PHARMDR. VERONIKA PROKEŠOVÁ – CONSTITUTIONAL PHARMACIST, MOTOL UNIVERSITY HOSPITAL IN PRAGUE**

Motol University Hospital in Prague is one of the largest medical institutions in the Czech Republic where medical cannabis is currently being implemented into practice. During this lecture, fresh experience with this process will be summarized and weak spots concerning not only legislative obstacles, but also insu cient education and readiness of the whole medical system for this alternative form of treatment will be identified.

15:45

## Points at issue with the accessibility of cannabis treatment

**PHARMDR. MARCELA ŠKRABALOVÁ**  
– STATE AGENCY FOR CANNABIS FOR  
MEDICAL USES (SAKL)

The Czech Republic has granted the second licence to grow cannabis for medical use. The license was granted by the State Institute for Drug Control (SÚKL) to a selected supplier, Elkoplast Slušovice s.r.o., in the public tender in May 2017. Based on the written contract for the transfer of cannabis between SÚKL and the licensed grower, SÚKL will buy defined cannabis varieties in defined quality and quantity from the grower. The licence is granted for a period of maximum four years. SÚKL becomes the sole owner of the purchased cannabis. The distribution of cannabis from licensed grower to pharmacies is conducted exclusively via the distributor, Alliance Healthcare a.s., selected by SÚKL in a public tender. Physicians and pharmacists who want to prescribe cannabis must be involved in the electronic prescription system and at the same time in the Register for Limited Medicines. Czech-produced cannabis should be available for patients in the first half of 2018.

16:15

## Current cannabis issues: The plant, its components, effects, dosage and administration

**DR. ETHAN RUSSO – INTERNATIONAL  
CANNABIS AND CANNABINOID INSTITUTE  
(ICCI)**

This presentation will survey issues related to Cannabis sativa, addressing the plant, the question of its speciation, morphology, phytochemical production in various parts (flower, leaflet, stalks and roots), examination of the biochemical and physiological effects of various selected components (cannabinoids, terpenoids, flavonoids), their medical applications and a brief presentation of dosage and administration approaches.

17:00

## Self-medication with cannabis in the Czech Republic

**MGR. BARBORA BLÁHOVÁ**  
– LEGALIZACE.CZ, Z. S.

The lecture discusses the controversial topic of self-medication with cannabis in the Czech Republic. It is based on qualitative anthropological research done in 2017, which included more than one hundred subjects treating themselves with cannabis, and presented their own point of view. The results help us understand the characteristics of cannabis therapy, which is not supervised by a doctor and whose structure is defined by patients themselves. We will primarily focus on the explanation of patients' motivation who choose this type and specific form of treatment, as well as on most common forms of application and dosing, related risks, interpretation of the altered state of consciousness, strategies employed when using this herb in daily life and, last but not least, the impacts of this kind of behaviour on personal relations.

17:30

## Personal experience of several patients with medical cannabis treatment

**DANIEL NAVRÁTIL**  
– CZECH PATIENT ASSOCIATION FOR  
CANNABIS TREATMENT (KOPAC)

Daniel Navrátil had to undergo an oncology treatment in 2007. After his colleague from work, who had similar experience one year before, had recommended him cannabis, Mr. Navrátil successfully used it to treat some negative effects of the conventional treatment. Also, after years of trying, he eventually succeeded in the elimination of psychoactive effects. Since he began his cannabis treatment, the awareness of professionals as well as ordinary folks has increased manifold, and there appeared more patients with similar diagnoses among Mr. Navrátil's friends who decided for one reason or another to try to treat their symptoms or side effects of conventional medicines with cannabis.

17:50

## Panel discussion

Contact  
information

Hana Gabrielová | hanka@hempoint.cz | +420 777 027 012  
Václav Trojan | vaclav.trojan@mendelu.cz