



**Kursus**  
**2 dage**  
Nr. 91068 P

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**Dato**

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# Medical Cannabis – production, extraction and regulations

The course will give a comprehensive overview of the breeding, production, and processing of medical cannabis plants. The aim of the course is to understand how to increase and keep the plant quality and cannabinoids on a high level along the selection of plant material, production, and processing steps.

## Aim

The course aims to increase the understanding of how to produce medical cannabis in greenhouses and indoor production in small- and large-scale size production. The input of the course will optimize the flow of production and increase work productivity.

Furthermore, increased knowledge of the biological and production processes of medical cannabis will be provided. The special focus will be on trouble shooting of different aspects of cannabis production and postharvest processing.

## Participant profile and level

The course is made for staff working within the medical cannabis production, e.g. breeders, cultivators, greenhouse keepers, junior master growers, section growers, sales and marketing, or QA- employees. The course will choose the level depending on participants' qualifications (background). The level of the course will be depending on the participants.

## Udbytte

- Fundamental knowledge about production systems in different sizes
- Overview about critical production steps and how to troubleshoot
- Understand how production and post-harvest methodologies can affect bioactive compounds

## Content

The course will contain the following topics:

- Biology of medical cannabis
- Breeding: What makes cannabis special? Select your strains: What do you need to consider and how to select?
- Propagation:
  - Cutting clones vs. germination seeds
  - Tissue culture (advantages / disadvantage)
- Production environment:
  - Small scale vs. large scale
  - Nutrients and growing substrate
  - Light quality and quantity
  - CO2 supplement
  - Emerging technologies for automatization in medical cannabis production
- Harvest and Processing
  - Prepare plants for harvest and drying
  - Different harvest and processing techniques
  - Extraction of high-value compounds
  - Use of waste as additional products
- Introduction to GMP

## Detailed program

### Day 1

8:30 Network and registration  
9:00 Intro botany/ production systems of medical cannabis  
10:00 Coffee break  
10:15 Breeding what makes breeding of medical cannabis so special history  
12:00 Lunch  
12:45 Breeding 2  
14:30 Coffee break  
15 - 17 Production  
17 - 18 Dinner

### Day 2

8:30 Production systems and environmental climate control  
11:00 Coffee break  
11:15 Production: Greenhouse vs. indoor, single purpose vs. vertical, planting density, best horticultural praxis  
12:00 lunch  
12:45 Extraction methods and analyses for medical cannabis  
14:15 Coffee break 14:30 Introduction to GMP regulations incl. export regulations, Danish monography  
16:00 Questions and certificates

## Form

The course will collect the Danish and Canadian knowledge and experiences of producing medical cannabis under

Danish production conductions. The course will be held over three days and will be taught mainly in English, but also partly in Danish (due to teachers from both countries Canada and Denmark). The course will start with an introduction to plant physiology and will go through all production steps with the focus on providing special knowledge for troubleshooting. The Canadian master grower will give insight into the world of challenges of both cultivation medical cannabis in small- and large-scale production. In addition, an experienced Danish medical cannabis breeder will give advice about breeding cannabis – these plants have a lot of potential and unknown genetical backgrounds. Finally, the postharvest procedure as drying and extraction methodologies will be explained with a focus on effects on bioactive compounds. The course contains teaching lessons, practical exercises, and discussions of diverse cultivation factors.

## Time and place

The course will be performed 9 - 10 May 2022 at Danish Technological Institute, Gregersensvej 1, 2630 Taastrup and includes food.

Stay in a hotel needs to be self-organized, but there will be reserved rooms at Zleep Hotel Taastrup close to the station.

Note! There is only room for 20 participants.

*The course is developed together with Den grønne konsulenttjeneste. For information about discount for GLS-A and HK/3F members, please contact consultant Lotte Julin Bock, phone +45 8740 3412.*

**PRICE WILL FOLLOW SOON.**



### UNDERVISER

## Anna-Catharina Röper

Anna-Catharina Röper, a horticulturalist with a Ph.D. from Copenhagen University. She is an expert in different plant breeding methodologies and is responsible for the Biotechnology Laboratory from Danish Technological Institute. She is the organizer and coordinator of the offered breeding courses by Danish Technological Institute.

### UNDERVISER

## Jens Ulff Skriver

Jens Ulff Skriver, Niras, is an educated el-engineer and has been working in the pharma industry for more than 25 years. He has many years of experience in Pharma projects as well as being responsible for GMP production facilities. Comprehensive experience with the establishment of different types of GMP medical cannabis facilities e.g. extraction.



#### UNDERVISER

### Thomas Sølvér

Thomas Sølvér, Cand. Pharm., currently acting as Manager and Principal Consultant at AlfaNordic Niras, has a long experience in the medical and biotech industry. Thomas has worked several years with pharmaceutical development and technology transfer, both as a specialist and leader. Latest Thomas has been working as a quality specialist and with the management of compliance projects within medicines and medicinal cannabis production.



#### UNDERVISER

### Hans Henrik Kampmann

Hans Henrik Kampmann works as medical cannabis breeder and has his own vegetables breeding company. He has been working as a breeder since 1990 for vegetables and ornamentals in Denmark and abroad.



#### UNDERVISER

### Andrew Maxwell Phineas Jones

Dr. Jones is an associate professor in the department of plant agriculture at the University of Guelph, and a member of the Gosling Research Institute for Plant Preservation. He is an expert in the propagation and cultivation of vegetatively propagated plants with over 50 articles in peer-reviewed academic journals in this area. Since then, he has worked extensively in cannabis production with projects ranging from plant tissue culture, breeding and genetics, and horticultural management.



## UNDERVISER

### Rime Bahij

Rime holds a Ph.D. in Biotechnology, from the University of Southern Denmark. Rime is specializing in natural products chemistry, process, and analytical chemistry and has more than 10 years of dedicated research in both medical cannabis and industrial hemp. Rime earlier worked as an Assistant Professor and Researcher at the University of Southern Denmark, where she was responsible for driving innovation within method development, equipment optimization, and advanced molecular data analysis.

## Har du faglige spørgsmål så kontakt



Anna-Catharina Röper  
+45 72203431  
[annr@teknologisk.dk](mailto:annr@teknologisk.dk)