# Press release

**Contact**

Dr. Jens Beator
Weiss Umwelttechnik GmbH
Greizer Straße 41-49
35447 Reiskirchen
Germany
Tel. +49 6408 84 6774
jens.beator@weiss-technik.com
www.weiss-technik.com

**Cannabis – Made in Germany.**

**Cannabis was approved for medical purposes in Germany in March 2017. Since then the producers’, investors’ and authorities’ heads have been spinning. They are trying to crack a market worth billions of euros, and discover how to turn an intoxicant into a safe medicinal product. The Cannabis Agency is responsible for laying down the framework conditions, and sets such a high benchmark that many investors are hesitating in spite of the expected profit. At the International Cannabis Business Conference (ICBC) from 11 – 13 April 2018 in Berlin, the industry will meet up and look for answers.**

**The adventure of legal cannabis cultivation**

Perhaps it is in the nature of the matter at hand: At any rate, the approval of cannabis has already created a great deal of confusion. To clear this up, a specialised department in the German Federal Institute for Drugs and Medical Devices (BfArM) – the Cannabis Agency – was established. It is responsible for issuing the limited cultivation licenses and monitoring the strict cultivation requirements.

These include the GMP (Good Manufacturing Practice) guidelines, Good Agricultural and Collection Practice (GACP) and the stipulations in the “Cannabisblüten” (Cannabis Flowers) monograph by DAB. And while patients and doctors impatiently wait to finally use cannabis therapeutically, investors and producers are looking for ways to meet the requirements of the Cannabis Agency and serve the rising demand as quickly as possible.

**Highly attractive growth market**

As other countries’ experience shows, the market potential is immense: For example, shares in cannabis producing companies in the USA are no longer insider tips, and are sky-rocketing in value. The potential of the German cannabis market can be illustrated by comparing it with Canada. Medicinal use of cannabis has been permitted there since 2001. Of roughly 36 million Canadians, about 200,000 patients currently use the analgesic, and the figure is rising. Extrapolated to the German market, that corresponds to almost 500,000 consumers. Assuming an estimated daily dosage of one gram and a gram price of 25 euros, the total demand would be an immense 182.5 tonnes per annum with a sales price of almost 4.5 billion euros. In the first phase in Germany, ten licenses for 200 kg each for 2, 3 and 4 years (a total of 6,600 kg) will be issued for the period from 2019 to 2022. Appropriate cultivation areas must be found for this as quickly as possible.

**Robust plants and precarious growth conditions**

To avoid abuse and prevent theft, cannabis may only be grown in closed and specially secured buildings. That incurs high costs for the construction and technical equipment of the growing halls. The plants themselves are laid back about this - they are naturally robust and hardy. Only the closed atmosphere of the greenhouses can adversely affect them, as it creates difficult microclimatic conditions and can promote proliferation of spores and bacteria. They in turn can be dangerous to patients, as proven by a case recently publicised in the USA. A woman there had for years been consuming medical cannabis contaminated with the dangerous fungus cryptococcus. As a result, she suffered meningitis and spent more than three months in hospital.

**No tolerance for deviations**

The strict homogeneity specifications of the Cannabis Agency further increase the requirements for air conditioning equipment in the growing halls. For example, medical cannabis can be cultivated in Germany in the varieties type 1, 2 and 3. Depending on the variety, the flowers must have a THC content of between 5 and 22%. As cannabis is consumed without processing, the permitted deviation is strictly limited. That entails risks for the producer: Given the lack of experience, even though the plants are growing wonderfully, a quality control could reveal that they do not have the required THC content. That would mean no revenue from sales, and the rejects would have to be destroyed at great cost. In addition to this, the producers’ partners could impose contractual penalties for such eventualities.

**Precise air conditioning for standardised cannabis**

To harvest homogeneous cannabis flowers in all areas of a production hall, precisely planned air conditioning systems are essential. First, you have to determine the parameters that lead to a specific growth and THC content in the given varieties. The system must then be configured such that the conditions required are present everywhere. The air conditioning system regulates the temperature control and lighting to give the plants the defined growth conditions. Humidity is another important factor: If it is too low, the plants will not grow as required, while excessive humidity promotes proliferation of spores and mould. Planning a system of this kind is a highly complex task that requires expertise and experience: Air exchange rates, flow speeds and ventilation system dimensions must be redefined for every plant growing hall.

**Empirical experience and knowledge transfer**

As there is no cut-and-dried solution, the industry is relying on German virtues like regulation, standardisation and technical expertise. In light of the lucrative orders, numerous companies are at the starting line and promising producers the earth. Involving a renowned provider of air conditioning solutions in growing hall planning can have significant benefits. Weiss Umwelttechnik from Hesse, Germany, is one such provider. While it does not have any cannabis references, it boasts outstanding experience and expertise in all of the relevant sub-areas. On one hand, the company has been developing and producing plant growth cabinets and chambers for research and science for many years. On the other, Weiss Umwelttechnik is a long-standing partner to leading pharma companies and has developed an industry-optimised control system that is used to control GMP-compliant processes worldwide.

The company has also founded the new “Biology” Strategic Business Area specifically for the cannabis sector, uniting the existing competencies under the leadership of biologist and industry expert Dr. Jens Beator.

**A close eye on all parameters to the very last gram**

“We regard ourselves as technical problem solvers. We know the biological requirements, have mastered the technical processes and have the right equipment. In addition to this, we have a nationwide service network in Germany and offer cannabis producers a highly attractive overall package,” explains Beator. Together with his team, he has developed a concept specifically for cannabis, that optimally supports photosynthesis and plant growth. That allows producers to significantly increase their yield for the same expenditure. The concept is based on a special air routing system that mixes fresh and indoor air and prepares it in accordance with the requirements. The conditioned air is then distributed so that every plant, every leaf and every flower is ventilated evenly and optimally.

**Green cannabis production**

Besides the construction and installation costs, companies must keep track on the high operating costs for the growing halls. Here too, there are significant differences between the air conditioning providers. For example, Weiss Umwelttechnik has offered particularly energy economical systems exclusively for many years and uses coolants with low GWP (Global Warming Potential) only. Also, when used right, air conditioning systems can help reduce the need for agrochemicals significantly. The image of cannabis production is as yet undecided. Will cannabis growers be able to shake off the unattractive drug-tainted reputation and succeed in making cannabis a sustainably produced medicinal product?

**Insights and outlook**

Given the many unanswered questions, the International Cannabis Business Conference in Berlin is a must for all potential investors, producers, buyers and technical suppliers. The topics and trends discussed there are also enjoying worldwide attention. The developments on the German market point the way forward as any regulation here could be the basis for European regulations. This also affects the results to be presented by the current Expert Commission for Cannabis Cultivation. Technical solutions that prove themselves on the German cannabis market could soon be flying off the shelves in markets throughout Europe.

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