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## PRESSEMITTEILUNG

### **Showcase Bioeconomy: Superfood hemp – an innovative source of vegetable protein**

**The University of Hohenheim presents a new collaborative project at the field day: The goal is to establish sustainable, regional value chains for hemp protein**

**Hemp has a future: Not only does it have enormous medical potential, it is also increasingly attracting the interest of scientists, companies, and consumers as a basis for novel, ecologically and sustainably produced foods. Researchers at the University of Hohenheim in Stuttgart have now teamed up with the Signature Products company in Pforzheim to develop innovative processes, technologies, and formulations for the production of protein-rich foods such as vegan cutlets, tofu, pasta, etc. made from regionally grown hemp. As part of the Bioeconomy Innovation and Investment Program for Rural Areas (BIPL BW), the Ministry for Rural Areas and Consumer Protection Baden-Württemberg (MLR) is funding the project with around EUR 1 million. Around EUR 365,000 of this sum have been awarded to the University of Hohenheim, making it into a heavily funded research area there. Today, the TASTINO project was presented to invited guests at a field day at the University's Agricultural Experiment Station, substation Ihinger Hof.**

The growing world population, increasing urbanization and rising income levels are leading to a spiralling demand for meat and animal-based foods worldwide. With far-reaching consequences for human health, the environment, and nature. "The remedy could involve a switch to a diet of mostly plant-based foods. Not only is it considered healthier, it is also much more sustainable," said apl. Prof. Dr. Simone Graeff-Hönninger, head of the Crop Systems and Modelling working group at the University of Hohenheim.

#### **Healthy and sustainable protein from regionally grown hemp**

Already today, more and more people are foregoing the consumption of animal protein for health, ecological, and ethical reasons. Instead, they are increasingly turning to products made from vegetable protein. The market for these meat substitutes is still relatively small. But Florian Pichlmaier, Managing Director of Signature Products GmbH, believes it is growing rapidly: "Currently, top-ranked Europe has a 40 percent share of the total global market for meat substitutes, and experts estimate it will climb to around EUR 2.4 billion by 2025."

So new plant-based protein sources are needed and smarter methods to tap into them.

Increasingly, the very versatile hemp plant is becoming the focus of interest. Its intoxicating effect does not play a role here. Commercial or industrial hemp is virtually free of the psychoactive substance THC.

In the project "Schnitzel, Hanftofu, PASTa & Co aus dem Reallabor Hemp - proteInbasierte Lebensmittel aus regiOnalem Hemfanbau" (TASTINO), the scientists and the company Signature Products now want to develop hemp seeds as a new source of protein for human nutrition.

"The seeds contain up to 25 percent protein, the composition of which is similar to that of egg white. It contains all the essential amino acids and is, therefore, of high biological value," said Dr. Forough Khajehei, a member of the Cultivation Systems and Modelling working group, when describing the advantages of hemp protein. "Moreover, it is also easy to digest and has a desirable, chewy, meat-like texture that creates the sensation of biting on meat in the mouth."

But not every hemp cultivar is suitable for every product. In total, the scientists at the University of Hohenheim are currently testing around 20 cultivars on the experimental plots on Ihinger Hof near Renningen. They are interested, for example, in what the ideal growing conditions should be, whether the plants are susceptible to diseases, or how high the yield is. But they are paying special attention to the ingredients of the seeds, especially the protein composition and oil, and which hemp varieties are best suited for which products.

### **Cooperation with a hemp supplier**

The scientists at the Institute of Crop Science at the University of Hohenheim are cooperating with one of the major hemp suppliers in Europe, who will initially test various technologies or business models under real conditions in what is known as a real laboratory and bring them to market maturity.

Signature Products GmbH organizes the complete regional value chain in cooperation with farmers, regional processors, representatives of the catering industry, and food retailers in Baden-Württemberg. Consequently, the company sees to the commercial cultivation of hemp, the processing of hemp seeds into protein and food development as well as bottling and distribution.

The company already supplies major customers with hemp seeds and hemp proteins. Most products that are currently still being manufactured from soybean or pea protein can be manufactured from sustainably and regionally produced hemp proteins in the future. Since its price is now also comparable to that of soybean, for example, Florian Pichlmaier sees a rosy future for the sustainable plant.

### **Accompanying research on social, economic, and ecological issues**

Ultimately, the project should help close regional material cycles and meet the strong demand for high-quality, protein-based, regionally produced food. Another goal is to increase the capacity for self-sufficiency of the population in Baden-Württemberg and to create sustainable jobs.

In parallel, the researchers are also investigating social and economic sustainability, consumer acceptance of the products or the creation of new jobs. Ultimately, their findings should result in recommendations for policy makers.

## **BACKGROUND: Heavily funded research areas**

In 2020, scientists at the University of Hohenheim raised EUR 33.8 million of third-party funding for research and teaching. In no set order, the series "Heavily funded research areas" presents outstanding research projects with a financial volume of at least EUR 350,000 for technical research or EUR 150,000 for non-technical research.

## **BACKGROUND: Science Year 2020|21 - Bioeconomy**

In 2020 and 2021, the Science Year will focus on the bioeconomy and, by extension, on a sustainable, biobased economic approach. The aim is to produce and use natural materials and resources in a sustainable and innovative way, to replace fossil and mineral raw materials, manufacture products in a more environmentally friendly way, and conserve biological resources. This is more necessary than ever in times of climate change, a growing world population, and a drastic decline in species. The Bioeconomy Science Year, organized by the Federal Ministry of Education and Research (BMBF), shines a spotlight on this topic.

Bioeconomy is the leading topic in research and teaching at the University of Hohenheim. It links the Faculty of Agricultural Sciences, the Faculty of Natural Sciences, and the Faculty of Business, Economics and Social Sciences. During the Science Year on Bioeconomy, the University of Hohenheim is hosting numerous events to inform the public at large and experts about this topic.

Science Year 2020|21 BMBF  
#wissenschafterjahr #DasistBioökonomie  
Science Year 2020|21 Hohenheim  
Bioeconomy at the University of Hohenheim

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