

Fighting hunger in the laboratory and in the field

At the “Green Gate Gatersleben® – The Plant Biotech Center”, they are working on solutions to ensure nutrition and sustainable agriculture.

At the **BIO 2017 International Convention** in mid-June in San Diego, California, the competences in Saxony Anhalt's life science sector should convince the roughly 16,000 experts in pharmaceuticals and biotechnology of the location advantages of Saxony Anhalt. Gatersleben is one of the locations, which is attracting a great deal of attention worldwide.

The wheat is growing well! But why? Why does barley provide so little yield? The employees of the Biotech-Campus in Gatersleben dedicate themselves to such questions. Here, in Saxony Anhalt, in the middle of Germany and on the best soil in the country, institutes and companies have set up, where researchers want to ensure the nutrition of the growing global population and promote the development of sustainable agriculture.

With 500 employees from more than 30 countries, the *Leibniz-Institut für Pflanzengenetik und Kulturpflanzenforschung (IPK)* [Leibniz-Institute for plant genetics and crop plant research] takes up the biggest area of the campus, and has the longest history. Founded in 1943 as the Kaiser-Wilhelm-Institut für Kulturpflanzenforschung [Emperor Wilhelm Institute for crop plant research] near Vienna, it moved to Gatersleben due to the Second World War. Since 1997, it has been part of the Leibniz association acting Germany-wide, under whose roof more than 90 institutions research in a knowledge and application oriented manner.

Gatersleben is a location with tradition, indeed the region is seen as the cradle of German crop cultivation. Since the mid 19th Century, intensive crop cultivation has been carried out here, primarily due to the dry climate and excellent soil which is beneficial for cultivation. The IPK, which houses the nationwide ex situ gene bank for agricultural and horticultural crop plants, is therefore in an ideal environment for its maintenance and research work around the topic of “biodiversity and performance of crop plants”. It is managed by Professor Dr. Andreas Graner and Dr. Johannes Heilmann.

IPK: Gene bank for crop plants

In four departments and additional independent scientific work groups, the researchers penetrate ever deeper into the principles of evolution. They discover how our crop plants adjust to their environment. On this basis, they develop innovative approaches, to help the crop growers and farmers worldwide, to increase the yields even under the conditions of climate change, and manage them more sustainably. For this, they use, maintain and increase a treasure trove, with one of the oldest and biggest ex-situ gene banks. Together with the interdisciplinary and internationally compiled research groups, and a state of the art research infrastructure, it is a unique selling point of the institute. “In a region characterised by agriculture, crop growing and research, the IPK combines scientific excellence, innovation and social relevance, to develop solution approaches to ensure nutrition and sustainable agriculture”, says Professor Andreas Graner as Managing Director proudly.

The employees of the IPK are looking for new findings and technologies to use plant genetic resources. In doing so, they are falling back on the genetic diversity of the crop plants. The research focuses include basic principles such as the formation of new species and cultural forms, as well as the explanation of how the genes influence their characteristics. Their findings help to control resistances and stress tolerance, and so increase agricultural yields.

All of this is possible due to the collaboration with the companies on the Biotech-Campus. Under the umbrella brand “Green Gate Gatersleben® – The Plant Biotech Center”, all the companies and institutions for plant biotechnology located in Gatersleben and the regional public authority establish joint activities. Potential company relocations and refundings benefit from the intensive specialist exchange of the partners, and the rental of laboratories, greenhouses, and office spaces by the Biotech centre and the Biotechpark in Gatersleben. In addition, companies combine their interests in the association InnoPlanta.

TraitGenetics: Genetic markers help with seed analysis

With its own technology transfer centre, the IPK ensures that its findings are made available for the good of society and the benefit of the economy. It also supports and accompanies spin-off companies. Currently, two economically successful spin-off companies are working on the Biotech campus in Gatersleben – in the form of TraitGenetics GmbH and IT-Breeding GmbH.

With around 20 employees, TraitGenetics is a small but sought after company, which has analysed seeds for plant growers all over the world, since 2001. Operations of all sizes send their samples to Gatersleben, and are sent the requested data. “We develop genetic markers, with which we can achieve quick and precise analysis results”, says company founder Dr. Martin Ganal. His company has already undergone several innovation cycles. With quick reactions to the requirements of the market, TraitGenetics has proven its quality again and again for customers from Europe, Canada, the USA and Mexico, Brazil, India or Thailand. In doing so, the company has also benefited from cooperations on site and in the region, as well as from qualified experts on site.

Bayer AG: Wheat growing station on the best soil

Advantages – apart from the long tradition of crop growing, the climatic conditions, the excellent agricultural environment in practice and research – which allowed Bayer AG to settle in Gatersleben 5 years ago, and then invest €15 million into the location. To start with, 6 employees worked in rented laboratories, now there are 21 in their own buildings. “Due to the natural conditions and the historical development, Saxony Anhalt is one of the best regions for crop growing in Germany”, says Elmar Alfons Weißmann, Manager of the European wheat growing station of Bayer in Gatersleben, getting straight to the point. His employees develop new wheat varieties, which are sold to farmers. It is planned to open a further department, which will be dedicated to rapeseed. There are also plans to expand Gatersleben into a Hypercare farm. On the Hypercare farms of Bayer, scientists use precise monitoring instruments to find out how plants develop. The results should help to improve plant varieties and achieve higher yields. Hypercare farms are already in operation in France, Texas and Minnesota.

Orgentis Chemicals: Tailor made biochemicals between test tube and large scale production

As a manufacturer and provider of special chemicals for biochemistry and high-tech applications, Dr. Hans-Matthias Vorbrodth founded Orgentis Chemicals more than 20 years ago, in the former sugar factory in Gatersleben. The location with short distances to universities, universities of applied sciences and research institutes in Göttingen, Braunschweig, Magdeburg, Halle and Leipzig, and the proximity to other researchers was also important to him. In this way, unique opportunities for cooperation and employee recruitment arise. 16 employees research processes to manufacture substances, on behalf of the customer. Whereby, the assignment often means that Orgentis first has to find the optimal path to get to the desired objective. In addition, the company develops synthesis processes, isolates and modifies natural substances, finds paths to enlarge laboratory processes on a technology centre scale. “We are a company that works on the volume between test tube and large scale production”, says Dr. Hans-Matthias Vorbrodth. He supplies companies in the life science industry, medical technology, electronics, diagnostics companies and research institutions.

The atmosphere which makes Gatersleben stand out is unique, where companies are welcomed and supported. Scientists and entrepreneurs unanimously point out: There is a great openness for building up the science and production location, and a real welcoming culture towards companies.

Author: Renate Wähnelt

From June 17. - 22., 2017, IMG Saxony-Anhalt promotes the biotechnology location Saxony-Anhalt to international investors at **BIO International Convention** in San Diego.

12.06.2017

Add page

