History of plant breeding in Göttingen

Beginnings until 1967

Even though the University of Göttingen has only had an independent Faculty of Agricultural Science since 1952, an "Agricultural Institute" with an experimental field was founded as early as 1872. The first holders of the professorship for Agronomy, Gustav Drechsler (1872 - 1890), Georg Liebscher (1890 - 1896), Conrad von Seelhorst (1896 - 1922) and Otto Tornau (1922 - 1955), were also somewhat involved in plant breeding in addition to plant cultivation and agronomy, but more from a practical breeding point of view. This only changed in 1955 with the appointment of Arnold Scheibe. The Chair of Agronomy was renamed "Agronomy and Plant Breeding", whereby Scheibe's scientific interest was primarily in plant breeding. The focus of his work was on genetic variation for plant quality and the possibilities of artificially inducing mutations.

In the history of plant breeding, there are two early great moments that are linked to Göttingen, even if they were rather coincidental. The young Kurt von Rümker completed his habilitation in " Landwirtschaftslehre " (Agricultural Science) in 1889 in Göttingen and held the first German-language lecture on plant breeding there from 1889 to 1892. His habilitation thesis "Anleitung zur Getreidezüchtung auf wissenschaftlicher Grundlage" (Guide to Cereal Breeding on a Scientific Base) is considered the first German-language textbook on plant breeding. However, von Rümker left Göttingen as early as 1892 and took up professorships first in Halle and later in Breslau. Even more significant for plant breeding was a short stay by the American geneticist George Harrison Shull in 1914, when he gave a lecture in German (not published until 1922) in which he proposed and defined the term "heterosis" for the first time.

1970 to 1994

When Arnold Scheibe retired in 1967, it was obvious that the field of “Agronomy and Plant Breeding” could no longer be represented by one person. Therefore, a separate professorship for Agronomy was established, occupied by Kord Baeumer (1967 - 1992), Rolf Rauber (1994 - 2017) and Stefan Siebert (since 2017), and since 1996 supplemented by a professorship for Forage Production and Grassland Management (Johannes Isselstein).

In 1970, two professors were appointed in the field of plant breeding, Gerhard Röbbelen (Applied Genetics and Plant Breeding) and Gerd Kobabe (Forage Plant Breeding). Gerhard Röbbelen's research interests were unusually broad. With a focus on cytogenetics and the genetics of plant quality, he worked with Arabidopsis, wheat, triticale, barley, peas and faba beans. But what received the most international attention was his groundbreaking work with oilseed rape. Important principles for the breeding of "double-zero rapeseed" (free of erucic acid and low in glucosinolates) and the development of hybrid rapeseed varieties came from Göttingen. Gerd Kobabe focused on breeding methods for ryegrass, including the use of heterosis and the suitability of various hybrid systems. In the Röbbelen/Kobabe era, 105 dissertations were produced, supported by the heads of

their own working groups: Tamas Lelley, Walter Schön and Gisela Bugge. Particularly successful was the development of methods for analyzing rapeseed quality by Werner Thies, which were used internationally.

1995 to 2018

Since 1995, there has only been one professorship for plant breeding, to which Heiko Becker was appointed. In contrast to the previous period, the work now focused predominantly on the two crops oilseed rape and faba bean. The working groups of Heiko Becker and Antje Schierholt (breeding methodology, genetic resources, nutrient efficiency, resynthesized oilseed rape), Christian Möllers (plant quality, cell and tissue culture) and Wolfgang Ecke (molecular markers, genome analysis) dealt with oilseed rape. In the last years of his service, Heiko Becker also worked on the development of mixed maize - climbing bean cultivation. A second focus was Wolfgang Link's work on faba beans (breeding methodology, fertilization system, quality). Sabine von Witzke-Ehbrecht worked on genetic resources (einkorn and safflower), and Bernd Horneburg headed the Organic Plant Breeding Section for many years with a focus on outdoor tomatoes.

Since 2018

The importance of breeding research as an extremely innovative field of agricultural science has led to the establishment of two professorships to succeed Heiko Becker: "Plant Breeding Methodology" and "Crop Genetics". At the same time, the "Center for Integrated Breeding Research" (CiBreed) was established with major support from several important breeding companies. As plant and animal breeding today use similar methods of genome analysis, a number of groups from the plant and animal sectors form this center’s core and organize, among other things, the Master's degree course "Integrated Plant and Animal Breeding" (iPAB).

The professorship for Crop Genetics was filled in 2019 by Stefan Scholten, who works, among other topics, on the interaction of genomes and trait variation in rapeseed. Tim Beissinger was appointed to the Professorship of Plant Breeding Methodology in 2018. His research interests were quantitative genetics and population genetics. He was particularly interested in whether a better understanding of crop evolution could contribute to more efficient breeding methods. In 2023, Tim Beissinger left the University of Göttingen to work at "The Moonshot Factory" (Google) in Mountain View, California.