Where hops are at home

175 years of hop cultivation in Tettnang







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Introduction



The Tettnang hop-growing region can look back on 175 years of success. The idea of cultivating hops in Tettnang was mooted as early as the 1820s. By 1844, the hops' time had come. Today, Tettnanger hops are an export success – three-quarters of our "green gold" is exported, and high quality produce from Tettnang can be found on every continent. In particular, our fine aroma hops are appreciated worldwide and used to refine premium beers of the highest quality. Around two-thirds of our growing area is planted with so-called "regional cultivars" (no crossbreeds), a valued commodity that master brewers use for the last hopping in premium beers. Our region's core competence is the exquisite Tettnanger variety, which only exists in this form in Tettnang, and to which 60 percent of the available acreage is dedicated.
"Tettnanger is the Mercedes of the hop varieties," this quote from a farmer could not be more appropriate.
On the occasion of the 175th anniversary, I would also like to send my warmest congratulations on behalf of the state government and wish all farms and employees in the Tettnang hop growing area every success and all the best for the future!

Winfried Kretschmann
Prime Minister
of the state of
Baden-Württemberg





A lot has changed in Tettnang during 175 years of hop-growing history. However, one thing has remained constant – the unique charm of this very special hop-growing region. This is perfectly encapsulated by the saying "Tettnang has something special", which was coined by our friend and former chairman Dr. Bernhard Locher, who sadly passed away long before his time. As much as we enjoy celebrating these jubilees, we must always remember that a success story such as ours is by no means guaranteed to endure. It is thanks to the unique skills and diligence of our hop growers, as well as their adaptability, that Tettnang has managed to remain a traditional growing area with a global reputation, while keeping its doors open to modern developments. In Tettnang, hops are not merely cultivated, but also lived. This becomes apparent to anyone who experiences the symbiosis between the raw ingredient, hops, the resulting beer and the beer connoisseurs on "Hopfenwandertag" (Hop Hiking Day). At every turn, you can feel that the people of Tettnang are proud of their hops, and that hops are an integral part of their culture and economy. We, too, are proud of our Tettnang hop growers – we are proud of Tettnang. And the 175th anniversary of hop growing in Tettnang is the perfect occasion to underline this.

Adi Schapfl
President of the Federation
of German Hop Growers





When a hop growing area celebrates its remarkable 175-year anniversary, the question naturally arises: What are the success factors there? Ultimately, many German and European cultivation areas have disappeared during the same period, while the significance of others has diminished. The competitive power of a particular growing area is determined by many factors, but primarily depends on how extensively the value chain is represented there, from variety breeding through to marketing. Tettnang has a lot to offer in this regard – including the trial estate in Strass, cultivation advice from the Lake Constance department of agriculture, a local laboratory to assess the hops' quality as well as a highly efficient marketing team. The most important success factor, however, is that Tettnang defines itself as an aroma hops area. More than half of the acreage is dedicated to the traditional Tettnanger variety. This unique selling point guarantees Tettnang its outstanding status among all the hop growing areas. On behalf of the German Hop Trade Association and its members, I would like congratulate the Tettnang region on the occasion of its 175th anniversary and I wish you all the best for the future.

Peter Hintermeier
Chairman of the
German Hop Trade Association





The Tettnang hop growing region will celebrate its 175th anniversary in 2019. The hop growers and the association see it as our duty to pause and reflect on this achievement, but also to focus on both current and future challenges. With diligence, skill and passion, 130 hop growing families produce, on 1,400 hectares, the finest Tettnang aroma hops for our customers all over the world. Tettnang has made a name for itself when it comes to refining specialty beers in the premium sector. Therefore, we can honestly say with pride and self-confidence that we can do it all – from highly delicate to high-alpha.

Our thanks go to all those who have worked and lived for and with Tettnanger hops for many decades. However, we still have a duty to support our customers and the people whose lives, work, daily routine and income are determined by hops. We are fully aware of our responsibility to preserve the tried-and-tested methods while remaining open to new ideas.

Let this anniversary and this commemorative publication mark another milestone on the way to our continued success in the future – with a unique hop culture for our home region.

Wolfgang Ruther
Chairman of the
Tettnang Hop Growers'
Association





We share a fascination with this plant that can grow up to 30 centimeters in a day and whose culture and cultivation so markedly shapes our landscape – whether through the hop poles or its bines that cover the hop gardens, which unfold their full effect when they have "reached the top" – for the local people, the hops are a symbol of both home and tradition. The hops not only characterize the landscape, they also leave their mark on many aspects of everyday life. This is made especially apparent by the central figures created by the Tettnang carnival club, such as the Hop Sow, Hop Jester and Red Spider, and also by certain local street names. However, this strong sense of local identity is also created by the smell of the hops and the intensity of our harvest activities – it becomes especially noticeable to anyone who is out and about in the town, villages and farms during the hop harvest. A very special highlight is the Hop Museum in the Hopfengut No20, which provides varied and impressive insights into our hops culture in the form of a journey back in time.

Like many other products, hops are a globally traded commodity, and the town's oldest "global player" in a globalized world.

Bruno Walter
Mayor of Tettnang

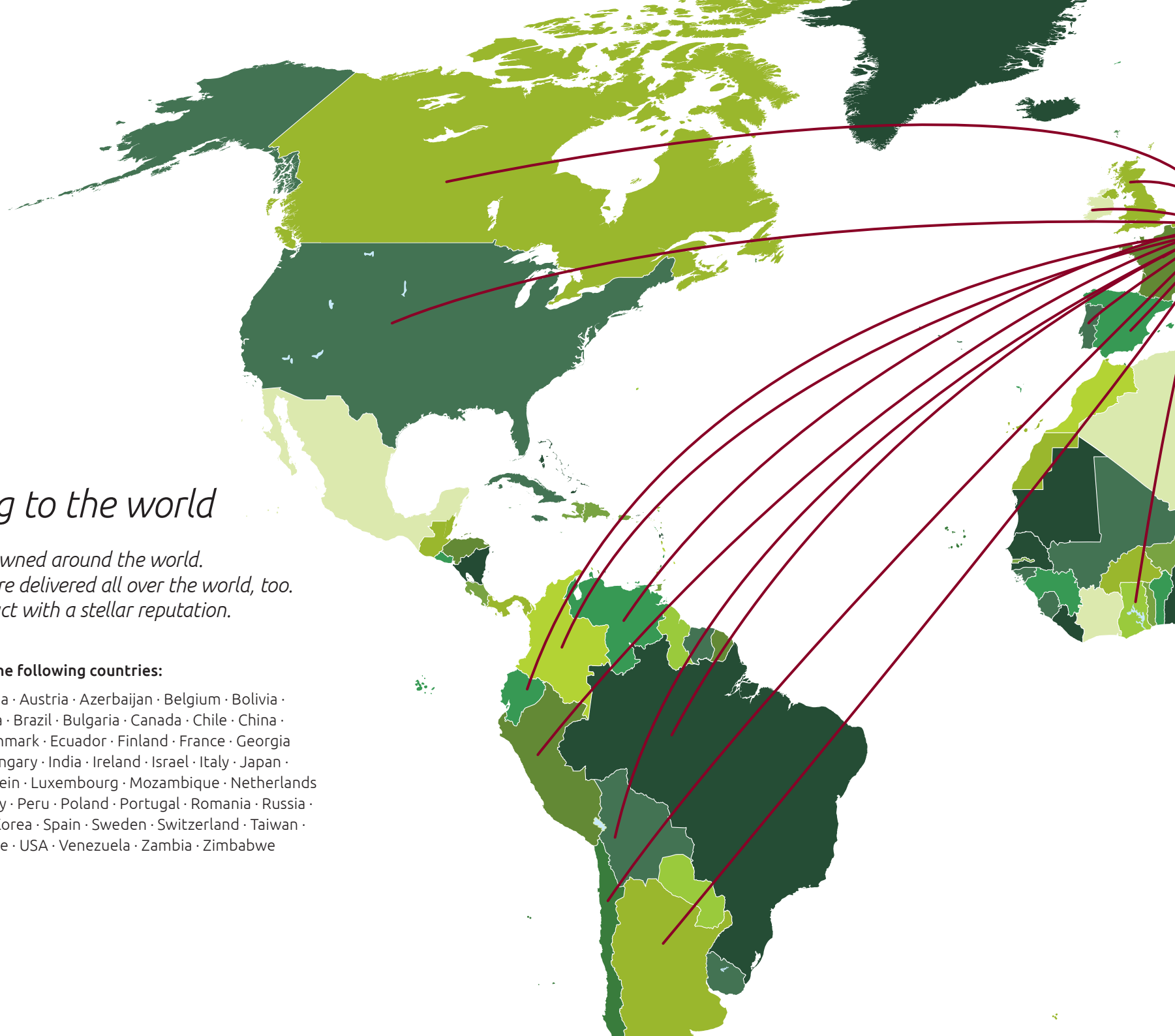




Germany is world famous for its manually brewed, high quality beers, its unique purity laws and its legendary assortment of beers that includes more than 6,000 different brands. There are currently 1,500 breweries in Germany – and this number is increasing. This long-term development would not have been possible without a traditional, reliable and globally unique hop industry in Germany – and for 175 years also in Tettnang. As brewers, we traditionally have close ties to the hop farmers in Tettnang. They create values, they stand for quality, sustainability and tradition. Thanks to their hard work, the people of Tettnang guarantee produce of the highest quality. And it is for good reason that the local hop growers enjoy an outstanding position in the international market. You can be proud of your achievements! Despite the competition for land and the challenges of globalization, hop cultivation remains a major job creator for rural areas. Thus, you are and remain an important pillar of agriculture and an essential foundation stone for the German brewing industry. We look forward to working with you in the future and wish you every success for the coming years!

Dr. Jörg Lehmann
President of the
German Brewers' Federation





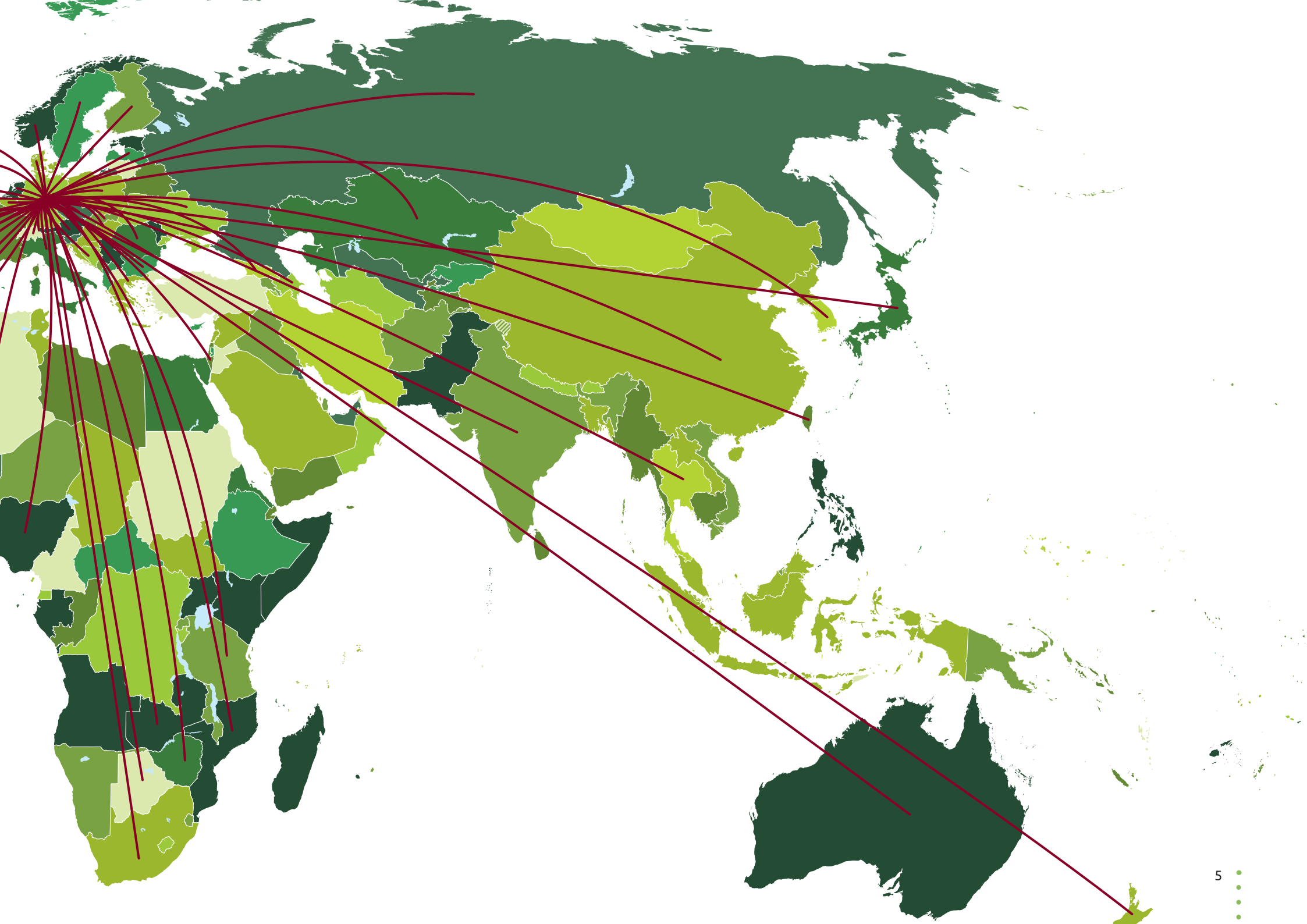
From Tettnang to the world

Tettnanger hops are renowned around the world.
And not only that, they are delivered all over the world, too.
As a unique quality product with a stellar reputation.

Tettnanger hops are used in the following countries:

Argentina · Azerbaijan · Australia · Austria · Azerbaijan · Belgium · Bolivia · Bosnia-Herzegovina · Botswana · Brazil · Bulgaria · Canada · Chile · China · Colombia · Czech Republic · Denmark · Ecuador · Finland · France · Georgia · Germany · Ghana · Greece · Hungary · India · Ireland · Israel · Italy · Japan · Kazakhstan · Latvia · Liechtenstein · Luxembourg · Mozambique · Netherlands · New Zealand · Nigeria · Norway · Peru · Poland · Portugal · Romania · Russia · Slovakia · South Africa · South Korea · Spain · Sweden · Switzerland · Taiwan · Tanzania · Thailand · UK · Ukraine · USA · Venezuela · Zambia · Zimbabwe

(Not an exhaustive list)





Hops and the New Palace are both symbols of Tettnang.
Picture: tt-bilder.de

Our hops – unique throughout the world

Our hops. Unmistakable, because they are incomparable. Their home is a region shaped by inventors and creative minds such as Graf Zeppelin, Karl Maybach and Claude Dornier, which has developed into the "Swabian Silicon Valley".

Against a majestic Alpine backdrop, we have been cultivating and nurturing our hops in the mild climate of the Lake Constance region for 175 years. Our green gold only grows within a latitude range of 35 to 55 degrees, where it is spoiled in the growing season with up to 18 hours of sunlight each day. Furthermore, our Tettnanger native cultivar thrives exclusively in our region – where the relatively high rainfall, high humidity and an average annual temperature of around nine degrees Celsius ensure strong growth.

The glaciers that once occupied this region retreated back to the Alps around 10,000 years ago. In most places, they left behind sandy limestone clay, which allows the roots of the hop plants to reach the necessary depth. The soil quality in this young moraine landscape with its fertile valleys and hilly slopes plays a major role in allowing the plants to flourish. Besides the optimum soil conditions in this defined geographical area, the hops are also supported by a mild, moderate climate that is "regulated" by the presence of Lake Constance. As a major bonus, two thirds of our region's rainfall occurs in the growing season from April to August. The combination of favorable conditions (soil, rainfall, duration of sunshine, average temperatures) allows the hops in Tettnang to reach a height of up to 8.30 meters.

Uncovering, cutting, covering, hanging wire, inserting wire, hooking, training, hilling, fertilizing and crop protection – the cultivation of hops requires experience, a lot of work and a special love for the plant. The hop is a short-day plant. Linear growth takes place as the days increase in length, with flower development beginning around June 21 when the days begin to shorten (short-day). Hop plants can live to an age of 50 years and older.

Just as our plants are extremely well-rooted and strive to reach greater heights each year, we too have our feet firmly on the ground yet also harbor lofty ambitions – to deliver the best quality hops to our customers. To ensure we keep it that way, there has been a trial estate in Tettnang-Strass since 1973. It primarily focuses on investigating production-related technical issues and studying the various hop varieties.

Through our hops, our customers savor the taste of the mountains, of beautiful nature and our hop gardens with their green bines, and breathe our fresh air. They know us, trust us and count on us. They know that we have been hop connoisseurs and passionate hop growers for generations.

Our Tettnanger hops, especially our aroma hops, enjoy an excellent reputation and are delivered all around the world. This is a source of great pride for us – and has been for 175 years. ■



We cultivate and nurture our hops against a magnificent Alpine backdrop. *Picture: tt-bilder.de*



*1994/1996: (from left) Renate Sauter, **Anita Schiller**, Monika Rauch*



*1996/1998: (from left) Stephanie Schreibmüller, **Evelyn Hanser**, Birgit Joos*



*1998/2000: (from left) **Petra Gebhard**, Martina Hirscher, Birgit Otomann*

Tettnang Hop Royalty



*2000/2002: (from left) Anja Hilebrandt, **Elisabeth Luitz**, Melanie Mamo*



*2002/2004: (from left) Steffi Locher, **Birgit Bentele**, Sandra Müller*



*2004/2007: (from left) Sandra Neher, **Christine Blank**, Eva-Maria Gierer*

Pictures: PR



2007/2009: (from left) ***Petra Muth****, Stefanie Schlachter, Verena Mack*



2009/2011: (from left) Marlen Milz, Sonja Monninger, ***Patricia Schmid***



2011/2013: (from left) Katharina Ruther, ***Anja Bentele****, Anita Kramer*



2013/2015: (from left) Petra Heine, Franziska Schmid, ***Jutta Häfele***



2015/2017: (from left) Sarah Hillebrand, ***Regina Mack****, Ann-Kathrin Heine*



2017/2019: (from left) Lena Heilig, ***Teresa Locher****, Kathrin Arnegger*

Bilder: PR

Tettnang – the town of hops

Hops are the lifeblood of the town and region alike:
The presence of the "green gold" can be felt everywhere

Tettnang – the town of hops. Not exclusively, because there is also significant industry here. However, the hops always come first. A fact that is immediately apparent to anyone who sniffs their way along the town's streets, paths and alleyways. It is also noticed by the people who live here in our town, villages and region. The hops' influences are manifold; they come from both the past and present – and point towards the future.

In Tettnang, hops are not just seasonal plants, but rather a way of life. The growers produce them with their hands, gardens, tractors and drying kilns. As do the people who identify with them.

And there are more than a few of them. They also represent the diversity that a vibrant and modern town like Tettnang can offer.

A town that expresses its pride in hops more than any other – from the traditional jester figures and the names of the town's alleys, paths and streets to a local culture that immortalizes its love of hops in works of art, fairy tale books and the town's museum.

The "Hop Sow"

Besides being a prominent figure in the "Fasnet" (a carnival held in Southern Germany to mark the start of Lent), the "Hop Sow" also took on a deeper meaning beyond the "fifth season" (i.e. carnival season). In the days of manual picking, the "Hop Sow" was the worker who picked the last hop bine in the hop garden at harvest time. This individual was venerated playfully: Wearing a wreath in her hair, she led the band of pickers back to the hop grower's farm in triumph. At the same time, the hop feast was introduced, which marked the end of the hop harvest for each farmer.

The carnival club's attachment to the local hops has given rise to several jester figures – for example, the original Hop Jester and the Hop Sow (left) as well as the Hop Fools and the Red Spider, who get along famously outside the hop gardens. ***Pictures: Forster/tt.bilder.de***





The figure was originally created for Tettnang's "Fasnet" carnival by the former prince Walter Senn in 1952/53, when he acquired a "hop sow" for himself and his guild. The lone figure stands out thanks to its mask with imposing tusks and "pig's bladder" accessory.

The family of Tettnang jester figures also includes the original "Hop Jester" as well as the "Hop Fools" and the "Red Spider".

Hop Jester

The original Hop Jester first appeared in 1937 as a single costume. Harking back to the Tettnang carnivals of the past, the Jester's costume still corresponds to the depictions that can be found on decades-old jester's flags. The original Hop Jester's outfit consists of a smock adorned with hop leaves made from green felt, and green breeches. The reference to hops is particularly evident in the constume's headgear – a hood (not a mask), which resembles a hop cone. The Hop Jester leads the band of Hop Fools that emerged in the 1950s and links them to the old tradition.

Hans Schlegel and Wolfram Locher first created a band of Hop Fools in 1952. Initially, they wore cardboard masks, which were replaced by wooden masks in 1954. These roguish faces can be traced back to a mask carver in Bibbenach named Hasenmaile. Their hats are painted with leaves, bines and hops. Their headdress consists of the "Hop Fool's scarf", which features felt sheets, bells, hops and hop leaves made from green felt.

The Red Spider mask was added in 1959. This costume consists of an insect-like red mask with hop headdress and a red hood. Its red umbrella is adorned with hops and small bells. To ensure this stubborn insect does not gain the upper hand, the Tettnang carnival rules state that there may only be one "Red Spider" for every twenty or so Hop Fools.

"Hop Sow" parade

In 2006, the fifth "Hopfenwandertag" (Hop Hiking Day), which was organized by the Hop Growers' Association, the Hop Museum and Tettnang town council, made headlines across the country. The reason for this was more than 90 life-size, individually designed Hop Sows, which lined Tettnang's hop trail, streets, squares and residential buildings. The spectacle rekindled memories of the old custom from the bygone days of harvesting by hand, when the Hop Sow was crowned with the last bine from each hop garden and farm.

This tradition found new modes of expression in the various works of art that followed, many of which can still be found in the local area today. The fact that the Hop Sow is among the most photographed motifs is due to a rich tradition of hop growing that has been uniquely preserved by the people of Tettnang.

Hop Trail

Honoring the Tettnanger hops, albeit in an unusual way: The Hop Trail opened in 1996 and stretches "from farmer to brewer" – with the Hop Museum in Siggenweiler on the heights above the town and the Krone brewery in the heart of Tettnang as key points (as well as Dieglishofen in between them). Along four entertaining and scenic kilometers, the Hop Trail vividly depicts the entire journey from hop cultivation to beer brewing. And it does so against a backdrop of "pure nature": Nestled between the hop gardens and orchards are ten information signs at the edge of the trail, whose topics range from "Hops in winter" to "What do you need hops for?" as well as "Plant characteristics". They serve as welcome stopping points – and not just for walkers, hikers and cyclists, but also for children, with special information signs for youngsters featuring the local characters Humulus and Lupulus.



The Hop Trail has captivated visitors with fascinating information and beautiful scenery since 1996. ***Picture: Roland Weiß***



A must for visitors from both near and far – the "Hopfenwandertag" (Hop Hiking Day). ***Picture: TIB***

Hop Hiking Day

Another highlight of the Tettnang hops tradition is the "Hopfenwandertag" (Hop Hiking Day) along the hop trail through the beautiful countryside around Lake Constance. "Beer villages" along the way entice visitors with a range of specialty beers – from local to international, from traditional to extravagant, and from both national and international breweries. The beer villages are staffed by Tettnang-based clubs under various different slogans. The focus is on music, enjoyment, having fun and simply being there – for anyone who appreciates Tettnanger hops or wants to experience or learn more about them.

Hop Royalty

As a child, many a local girl dreams of becoming a hop princess or even the Hop Queen. Expertise, regional solidarity, ingenuity and, of course, charm are the most important selection criteria – for example, one young lady won the election by intro-

ducing hops to the cosmetics industry via a presentation entitled "A beer belly has no wrinkles". A confident manner and good elocution are also essential preparation for these roles – the Hop Royalty (wearing the "Dirndl" traditional dress) is required to represent the "green gold" both nationally and internationally at fairs, breweries and other events. The inaugural Hop Queen and her two princesses were elected on August 20, 1994 – these popular local women then "hold office" for two years.



Always on duty for their beloved Tettnanger hops – the Hop Royalty, shown here at the Montfort festival in 2018.
Picture: Olaf E. Jahnke

Hops Beer Table

The "world's longest beer table" was first constructed on the occasion of the second Hop Hiking Day on August 23, 1998, and earned an entry in the Guinness Book of World Records. It stretches from the Krone brewery in Tettnang to the Hop Museum in Siggenweiler, which opened in 1995 – a distance of more than four kilometers. And to ensure there are no complaints, the two streets Kirchstrasse and Bahnhofstrasse, which cannot be blocked to traffic, are spanned by means of "air bridges" during the event. Exactly 29 breweries participate in the fun by supplying the tables and benches.

Kau Hops Festival

This hometown festival began as a small farm festival at the "Lamm" guesthouse in 1956. After literally falling into the water the year before, the event's premiere finally took place in late August. It was organized by the fire department in Kehlen, whose members included many Kau residents (the hamlet belonged to the municipality of Kehlen at that time).

On the Saturday, the Kreuz guesthouse had invited guests to enjoy some "Metzelsuppe" (traditional sausage soup), and on Sunday a lively folk festival was hosted by the innkeeper Kiechle. And a "Wettbrocken" (prize draw) was of course included: The first winner was "Mrs. Wirt from Walchesreute, followed by Mrs. Marschall from Kau and Miss Sunke from Pfingstweid", according to the book "Green Gold".



With fascinating exhibits and fun activities, the Hop Museum appeals to visitors of all ages.
Picture: Hopfengut No20

When Kau was integrated into Tettnang in 1975, the Schützenverein Waldeslust Kau took over organization of the event. Some things remained the same, however, and the old "Brocker" (hop pickers) splendor is still revived in Kau in mid-August. At the prize draw in 2018, Maria Schneider's routine helped her to victory ahead of Silvia Pfeiffer and Claudia Locher, the mother of Hops Queen Theresa Locher.

Hop Museum

Since 1995, the Hop Museum in Siggenweiler has helped to raise the profile of Tettnang as a hops town. Bernhard and Inge Locher had already acquired the former Steiner farm years earlier – and clearly understood how to bring this linchpin of the local hops trade into the modern era.

The 2000-square-meter Hop Museum quickly proved to be an affair of the heart for Inge Locher, who became the first woman to be awarded the title of "Knight of the Hops Order" in 2001. The museum itself has won numerous awards, including a national award for being a "model hometown museum" in 1998 as well as the district cultural award in 2010.

As a result of this exemplary private initiative, the second floor of the museum now showcases the working year of the hop growers and the hop drying kilns, while on the third floor the manual harvests of the 1950s have been revived. The museum with its hop gardens and array of technical equipment formed a whole that would become a brand in its own right – and included the "Bierstängel" restaurant on the ground floor as well as the museum's store and function room, which for many years was home to the "Hopfenbrockerblues" (hop pickers' blues) with Ingrid Koch as well as the Schreiber/Locher blues double act.

After the death of Bernhard Locher, this concept was taken up and expanded by his children, Charlotte (married name: Müller) and Lukas. The result is the "Hopfengut No20", which includes its own brewery and serves as a meeting point for companies and clubs as well as small groups, families and individuals from near and far.

The facility offers a broad range of attractions ranging from children's hop picking to beer-themed culinary or public tours and special events such as "Brewer for a Day".

Hopfi's Storybook plus "Lukas, Lotte ..."

170 years of hop growing in Tettnang gave rise to "Hopfi's Storybook" in 2014, which was published by Tettnang's municipal marketing department. Twelve authors from the ranks of the Signatur literature society came up with various tales and adventures based on the Tettnang hops scene. Illustrated by Rainer Zilly, the book contains stories in which, for example, a little green ghost goes in search of the town's creek (which has vanished) and meets the guardian angel Rosi. And of course, plenty of information about Tettnang and its "green gold" is also conveyed in a playful and child-friendly manner.

As early as 2005, the picture book "Luke, Lotte and the Green Gold" was published to mark the Hop Museum's ten-year anniversary. The book was written by Karin Nowak, illustrated by Elina Deberdeeva and edited by Ingeborg Locher.

Hopfentod

Besides appearing in fairy tales and non-fiction books, Tettnang hops are also the subject of a crime thriller. Bernd Weiler entitled his Lake Constance thriller of 2014 "Hopfentod" ("Death among the Hops"). The (rather gruesome) story begins when the body of a Tettnang hop farmer is found hanging in his hop garden. Commissioner Lorenz soon realizes that the case is far from clear cut – the man's death was not caused by hanging. Furthermore, the presence of multiple injuries on the body indicates several perpetrators. What actually happened at the Hop Festival on Saturday evening?

Hopfenau

The times are changing – including in Tettnang. After 15 successful years, the "Hopfencup" (a badminton tournament organized by the ski and sports club) had well and truly run its course, as had the "Hopfenbrockerblues" in the Hop Museum and the town band's "Hopfenhock" evening in Missenhardt. At the same time, however, something new was created in the form of the "Hopfenau" (hops meadow): Since 2016, this has been the charming name given to the children's play area that the town of Tettnang opens up to the public in the summer holidays. A number of sponsors and 150 helpers help out every two years to provide fun activities for almost 200 boys and girls.



The pride in their hops felt by the residents of Tettnang is also reflected in the local street names. *Picture: Roland Weiß*

Hop Streets

For a long time, Hopfenstrasse (Hop Street) and Hopfensteige (Hop Track) have pointed the way to the "green gold". The former stretches from the junction of the state road to the "Lamm" restaurant in Kau. The Hopfensteige can be found – coming from the Hop Museum – at the entrance to Siggenweiler.

The fact that the people of Tettnang have no fear of contact with other types of hops is evident in the "Leimgrube" – an exclusive development area above the clinic that was only opened in the mid-2010s. Several streets there are named after other German hop-growing areas – Hallertrauer Strasse, Spalter Strasse and Hersbrucker Strasse.

Tettnang, however, is not the only area that lives and breathes hops. In the municipality of Meckenbeuren, and especially the district of Obermeckenbeuren, the "Hopfenweg" (Hop Path) serves as a constant reminder of the area's attachment to the "green gold". The Hop Path provides a quick route between Kapellenweg and Mahdenäcker – naturally, with a great view of the hop gardens.

Hop Circuit

This bike trail is almost 42 kilometers long and starts and finishes at the nature conservation center in Eriskirch. Anyone struggling to find the signs with the gray wheel and green loop should simply learn the route off by heart: head towards Friedrichshafen, before entering the town head towards the Seewald until you reach the hop fields in the Schussental and the idyllic wooden bridge at Oberbaumgarten.

By the time you've passed through Pfingstweid and Tettnang and reached the hop farms and Hop Museum near Siggenweiler, you've already completed half of the route. The second part takes you through the Argental and along the Argen river as far as Gohren and its cable suspension bridge. Via Langenargen, you then return to the starting point on the "Bodenseeradweg" (Lake Constance bicycle path).

Strolling through the town of hops

Tettnang's reputation as a special hop town was further enhanced by its first hop market in 2018. Just before the harvest, the town's marketing team invited visitors to take a "stroll through the town of hops" via the town center, which was decorated with hop bines, towards the Städtlesmarkt.



Of course the Hop Royalty were on hand to share their enthusiasm for the local hops with visitors.

Fancy culinary creations in solid and liquid form, such as hop liver sausage or cocktails with fanciful names like "Hop Helga", "Hop Hugo" and "Hop Inge" were also on offer, as well as children's hop picking, after which the boys and girls could exchange their hop-basket tokens for a scoop of delicious ice cream. The subject of the "Harvest Forecast" raffle was the yield of the 2018 hop harvest. Around the well, music, cold beer and information about the art of brewing were all on offer, while Daniela Bentele diligently plaited her popular hop wreaths and shared the secrets of her art with interested bystanders.

Green Hop Award

Also new: the "Green Hop Award". The region's largest ever beer jury (probably) was convened for the Bähnlesfest 2018, the regional beer awards. Around 400 jury members sampled and judged beers from eight predominantly regional breweries, before selecting the first (but certainly not the last) winner of the "Green Hop Award". Twelve beer clubs from the region provided the jury members, who were asked to compare four types of beer served in small glasses, without knowing who had produced them. In addition, the festival visitors were given the chance to taste non-alcoholic beers, pilsners, wheat beer and the breweries'

An insider tip: You can pedal your way around this beautiful region along the "Hopfenschlaufe" (hop circuit). *Picture: Roland Weiß*



A well-received highlight of the Bähnlesfest 2018: the inaugural "Green Hop Award".
Picture: tt-bilder.de

ches the annual festivities time and again – as a unique hallmark of Tettnang. The ensemble consists of around 50 musicians under the guidance of Georg Härle (from Wildpoltsweiler). They are all also hop growers – there are often even several generations of players from the same farm. Härle has set the tone since 1998, while Bruno Stemmer from Bodnegg-Achmühle held the conductor's baton before him. Johann Heimpel first convened the orchestra for the hop growers' ball in 1994, at which the first ever "Hop Royalty" were elected to mark the occasion of the industry's 150th anniversary. As the headline band that night they naturally played the "Hopfenexpress" ("Hops Express").

Memorable performances by the growers' band include those given at their own ball (held every two years), at the Oberschwabenschau in Ravensburg 2016 and at the Fruchtwelt trade fair in Friedrichshafen. It goes without saying that the band also makes a musical contribution to birthdays, weddings and even funerals.

Everyone is looking forward to their big performance in the jubilee year 2019 – Tettnang's musicians have been booked to play during Green Week in Berlin. ■

specialty beers during the various tasting rounds. Tettnanger hops were used in the majority of the winning beers – including the cellar pilsner "Tettnanger Krone" which triumphed in the specialty beer category.

However, ample evidence that hops are also suited to other drinks besides beer is provided by a wide range of successful liqueurs and schnapps. Hop gin has also gained quite a reputation in our region – most notably, the beverage produced by Josef Biegger at the Hopfenstube restaurant in Schwarzenbach, and Philipp Blank's creation at the Hotel Rad in Tettnang.

Hop growers' band

Their attachment to each other and to the local hops also provides rich pickings from a musical point of view. The town's "Hopfenpflanzerkapelle" (hop growers' band) enri-

A Tettnang peculiarity: the hop growers' band. *Picture: PR*



“Hops – they’re my whole life”

Hops have shaped her life – and still do so today. On May 27, 1927, Rita Sprenger was born into the hop growing Bentele family in Siggenweiler near Tettnang. “Even though we no longer have a farm, every year I feel relieved when the hop harvest is successfully gathered,” she says. “Hops – they’re my whole life!”

Ms. Sprenger, what are your earliest memories of hops?

There were eight children in our family and we often spent time in the hop garden. By the age of ten I learnt to train the hops under my mother’s supervision. To do this, we would choose three handsome bines of equal length. We would let two of them run along the rootstock – in case hailstones damaged the trained bines. I also turned the buds – or at least the ones I could reach. Once I’d had a go, the taller members of the family had to take over.

How important was the harvest season for you?

Very, although we had only a small farm with 4,500 plants, six cows, fruit and a bit of wheat, rye and oats for our horse. Depending on the weather, the hop harvest used to take three to four weeks. For example, eight to ten friends and relatives from the Allgäu region came to help us – they took extra leave especially for the harvest. Entire families came from Ulm, the Biberacher area and Crailsheim to help on the other farms. These were merchants, for example cobblers. After the hop harvest, they harvested potatoes and then moved on to the country fairs.

What happened during a harvest day?

We went to the hop gardens at 7 a.m., later if it was raining, and started picking the hop leaves and cones. In heavy rain, we sometimes just waited or did the actual picking under the roof at home. Around 9 or 9.30 a.m. we had a snack in the hop garden with bread and fruit wine, which was half diluted with water for the children. Around



Rita Sprenger at the Hop Museum at Hopfengut No20. The photo on the right shows her in the hop garden at a young age.

Picture: Hildegard Nagler

noon we had lunch, usually meat, vegetables and potatoes or homemade swabian noodles. At 4 p.m. there was another break, we ate a piece of bread, butter and canned sausage – a pig was usually slaughtered before the hop harvest. When it was dark, we had an evening meal of new potatoes, milk, butter and bread. Or sour beans and potatoes. Later, when my husband and I worked on the Steiner estate, 250 harvest workers had to be fed – that was a huge undertaking.

Your lime blossom tea, which you used to make back then, is still legendary today ...

I used to brew it in a 100-liter copper that was galvanized inside. When the lime trees near the farm were in blossom, we used to pick the flowers and dry them in pillows and linen bags. I used to boil these blossoms in the copper for two to three hours. When it was cold outside, there was hot tea with a drop of Williams fruit brandy. When the weather was hot, the tea was served cold.

Earlier, before the war, the pickers had to feed themselves.

Yes, that's right. In the morning and at noon, the baker and the butcher used to come to the hop gardens. The pickers earned ten to twelve pfennigs more so that they could buy food. During the war, there was stew.

How much did an adult pick per day?

Eight to twelve baskets a day. Because the Hallertauer hops have softer stalks and not so many leaves, some pickers managed 20 baskets per day. Once a basket was full, there was a metal tag or a cardboard one, which was also called a "Simri". One basket was worth 50 pfennigs. Later, the pickers earned more and got 1.30 marks per basket.

Old documents always extol the sense of conviviality that existed in the hop gardens ...

As children, we were very happy in the hop gardens, because we heard and experienced a lot there. We had a lot of fun, but also messed around, when we weren't working. We sat together, talked and sang a lot, sometimes we even made up lyrics or rhymes by ourselves. Sometimes the zeppelin flew over nearby, so we composed a song about it, set to the tune of "O Tannenbaum". During the war, people also sang soldiers' songs. When the low-flying aircraft came, we found cover and prayed.

Did you also fear bad harvests?

When there was a storm, we lit the weather candle and prayed. And sprinkled holy water out of the window. In the late 1940s, a hailstorm caused a severe crop failure. My mother had died shortly before, we were broke. We had to save everywhere. I still don't know how we got through it.

What was it like when the first hop-picking machine was used?

That was something new for all of us. The pickers could hardly believe that they were no longer needed. Later, some of them helped by picking cherries. A lot has changed since I was a child, including in hop growing. I still like to look at the hop gardens. And I can tell straight away if a plant is missing. ■



Hop cultivation in earlier times.
Picture: Archiv Marlies Nagler

In the bag

The work of the "binman" was exhausting – he had to stand inside the bin, a 50-kg jute sack that was hung in an opening on dry soil and held in place by the so-called "binman's latch" with an iron ring.

From the outside, dried hop cones were tipped into the bin. The binman would steadily trample these down, slowly working his way upwards. "Sometimes, the children didn't know how many dried hops we should pour into the bin," recalls Rita Sprenger. "So sometimes we completely covered the binman with hops. He would just stand there inside the bin, cursing."



This plaque from 1886, which is now on display in the Montfort Museum, commemorates the pioneers of the hop industry. ***Picture: Roland Weiß***

Hops – more than just a tradition

The background

There are records of hop growing in Germany dating back around 1250 years. A goods description from the year 1150 mentions a "farmer in Bernried" near Tettnang who was required, among other things, to give "one hops" (probably one sack of hops) annually as interest. In Württemberg, 1802 is considered the first year of hop cultivation in the Gäu region around Herrenberg – an area in which the last hop garden was grubbed up in 1978.

1822 The first hop trials were initiated by the sovereign in Hohenheim, and in the southern part of the country, hops were planted at an early stage in Saulgau/Altshausen (the first trial gardens were planted in 1821, with hop growing ending there in 1977). At this time, there were still no large-scale growing areas or hop exports to speak of.

Hops were initially only used at the place where they were grown, which explains the low yields in Tettnang before 1844, where the farmers predominantly focused on viticulture and fruit growing. Nevertheless, according to the evidence there were six breweries in Tettnang in 1841, each of which had their own beer cellar – and grew hops in their own small garden. Small-scale cultivation was also typical elsewhere until the 19th century.

Not mere happenstance: 1844 was the founding year and the start of the first phase

1844 The fact that large-scale hops cultivation began in this year has been established thanks to a commemorative plaque donated by the Tettnang agricultural and trade association ("Landwirtschafts- und Gewerbeverein



Important contemporary document from 1865: A marksman's target depicting (from right to left) a hop trader, a hop producer in traditional costume and a local broker. ***Picture: Roland Weiß***

Tettnang") in 1886. In 1843 Johann Nepomuk Fidel von Lentz had established a small sample garden. According to the plaque, the following year he – along with the postman Bleicher, the merchant Bueble, the town treasurer Eble, the physicians Dr. Halder and Dr. Koller, the government administrator Heuss, the economist Müller and the town councilman von Wolff – promoted hop growing in such a way that 1844 can be considered "year zero" for the history of hop growing in the region.

These seven townspeople, many of whom would later become hop traders, and a farmer came together in Tettnang. But why at this particular time? The years before the 1848 Revolution were characterized by crop failures and famine, which in turn gave rise to various attempts to make the region's unreliable agricultural soil more stable.

While hop farming had largely been a middle-class hobby in the first half of the 19th century, due to changing framework conditions it later became attractive to farmers as well. Society began to move away from feudal structures; this was promoted in Württemberg by the abolition of tithing in June 1849.

These developments coincided with the arrival of the railway network in the region by 1847 – and not only the local "Swabian railways", but also lines from Bavaria and Austria. The volume of trade and goods was increasing, and the regions's viticulture, reeling from an outbreak of phylloxera, was now facing competition from cheaper imports. At the same time, the consumption of beer in the German states had doubled between 1828 and 1841. This was coupled with a wave of technical progress, which in later years would come to be represented by Carl von Linde's refrigeration machine (1871). This device removed the need to use natural ice as a refrigerant and made it possible to brew beer using the bottom-fermentation technique everywhere, all year round.

The result of this confluence of events was the increasing importance of hops – and also an increase in their prices, as shown by contemporary quotes from Tübingen.

A pioneering spirit and some initial approaches to getting organized

1866 Generally speaking, a strong pioneering spirit became widespread in Germany by the 1860s, and in 1866 Israel Friedrich Wirth took up residence on the 19-acre Kaltenberg estate. He adopted a groundbreaking approach to improving the cultivation methods (e.g., with trellises) and the drying process – and even wrote a textbook on the subject in 1875. In 1869 he became an honorary citizen of Tettnang, however he departed his "Castle of Hops" and the town in 1882. Kaltenberg then became the property of Count von Blücher. Following the latter's bankruptcy in 1884, the estate passed to hop dealer Fritz Bauer and then to Adolf Adorno in 1888.

1868 The first local hop trading company, Hopfenhandlung Fritz Vogel, was founded.

1870 A year described by Peter Heidtmann in his book "Green Gold" (a chronicle of the hops festival published in 1994) as the "year of death for urban hop cultivation" as the result of a catastrophic fall in hop prices (probably due to higher harvest quantities and lower demand in the war year). However, the "hops cycle" soon began to emerge – by 1871, prices were back on track.



In 1871 Karl Jauslin depicted the harvest of the "pole hops" on Friedrich Wirth's research farm near Kaltenberg. *Picture: PR*

1874 The German Hop Growers' Association (DHBV) was founded in Nuremberg. It experienced various ups and downs until its reform in 1892, which Adolf Adorno helped to initiate. Together with the like-minded C. Beckenhaupt from Alsace, he confronted the leaders of the association and the Nuremberg-based traders, with the prices being a major issue.

1875 One year after the association's founding, the first major German hops exhibition was held in Tettnang New Palace. It was organized by Israel Friedrich Wirth and included the annual meeting of the still nascent DHBV – and was a great success: Some 9000 visitors flocked to the palace over three days.

1880s More than 100 hop traders could be found strolling around the town center at harvest time. As a rule of thumb, smaller harvests were associated with higher prices. In the 1890s, the harvests in Tettnang produced around 15,000 quintals – as part of a total German yield of almost 500,000 quintals. Domestic supplies were estimated at 360,000 to 390,000 quintals, which were grown on 36,000 hectares at the zenith of production. A special feature: the "Tettnanger Früher" va-



Hop harvest in Tettnang, 1936. One of the people in this photograph is Rosa Rehm, née Gerber, from Pfingstweid near Tettnang. ***Picture: PR***

riety produced a much higher yield than "late hops".

1896 Probably between March 1896 and March 1897, a local hop growers' association was founded for the Danube municipal area as a branch association of the German Hop Growers' Association – however, a precise date cannot be determined. Its chairman, Oskar Adorno (1872–1937), was committed to upholding the German protective tariffs against cheap hop imports, notably from Russia. In the following years, he ensured that hops were mentioned in the newspapers time and again – sometimes by railing against the trading houses (for issuing rose-tinted crop forecasts designed to push down prices), at other times by directing his ire against the association.

1896 The town of Tettnang constructed a hop hall at the railway station, in which hop auctions were held until 1926.

Difficult years before and during the First World War

1908 An oversupply of hops lead to a catastrophic price crash. A new approach was needed – reducing the size of the growing areas became the order of the day.

1911 A year of unparalleled bad harvests: In Tettnang just 8000 quintals were "brought in".

1914 Hop cultivation proved to be far from immune to world events – the First World War threatened to decimate, and almost destroy, the industry. The cause of this catastrophe was a decline in German beer production and the associated fixing of production quantities by the state (at 15 percent of the peacetime amount). The ingredients were also regulated, resulting in a weak "single beer" with one percent of original wort. There was also a shortage of sacks, fertilizers, wire and manpower – prisoners of war were used as a temporary solution. To put this into perspective: Before 1914, four out of ten Germans worked in agriculture.

1918 With the war at an end, the recovery started with the aid of mechanization (tractors) as well as permanent international cooperation among the associations. However, another crop failure first had to be dealt with – just 1800 quintals were produced in Tettnang. "Another year like this one, and hop production will be on its knees," warned Oskar Adorno.

1919 The harvest rose to 7,500 quintals (1914: 18,000), which were traded at prices as high as 900 to 1,000 marks.

A short bloom

1920s to 30s: A limited expansion of the growing areas was initiated following their drastic reduction (1914/1924/1932: 27,700/11,600/8,000 hectares). This went hand in hand with a blossoming of hop growing in the Weimar Republic.

1920 The hop pickers in Tettnang rebelled by organizing themselves into working groups and demanding – in view of the general rate of inflation – 1.50 marks per "Simri" (30-liter basket). Although the growers conceded to this demand, they objected to the workers' "presumptuous and threatening tone". With the inflationary pressures coming to an end; the price per quintal reached an all-time high on November 28 1923 of 400,000,000,000,000 marks (400 trillion).



Always a special moment in the hop garden: the crowning of the "Hop Sow", the worker who picked the last hop bine.

Picture: Hop Museum archive

1923 Oskar Adorno became Deputy Chairman of the DHBV.

1924 There was growing concern following the first outbreak of the fungal disease Peronospora, also called "downy mildew". Adorno helped to sound the alarm bell on the basis of findings by the University of Hohenheim, while for a long time the DHBV's governing body insisted the problem was due to the "prevailing wet and cold weather".

That year, the yield was just 2000 quintals.

1925 With the late hops predominantly infected, the harvest began two weeks earlier. The focus was on determining which varieties were are less susceptible to the disease. Schwetzinger ("Alt-Tettnanger"), Spalt Mittelfrüh and Tettnanger Früher were the favored varieties and gained a reputation as high quality hops. Murmurs began to be heard on a topic that would become a major issue by the mid-thirties – namely, whether or not to stop cultivating the Striesselspalter variety. There was an increasing tendency towards establishing Tettnang exclusively as an area for "early hops".

1926 was the "Year of Peronospora" in Germany, and especially in the Hallertau region. In the same year, these outbreaks led to the establishment of the German Hop Research Society in Hüll (near Wolnzach), which included a hop research institute.

1929 The provenance law, which had been long demanded by the hop producers, came into force in Germany during this year. In Austria and Great Britain, it had already been common practice for 20 years. In the state of Württemberg, two areas were designated with official seals – Tettnang and Rottenburg/Herrenberg/Weil der Stadt. The district office laid down the rules: There were five weighing halls with official seals in Tettnang (Fiedel Igel and J. Suntheimer, both near the station, Gustav Rosenhauer, corner of Bach/Storchenstrasse, Simon Steiner, Wilhelmstrasse, Fritz Vogel, Kirchstrasse) as well as one in Meckenbeuren, which was operated by Josef Deutelmoser. The top and side seams of the sacks from these halls were to be sealed with red lacquer and a label.

1930s A price crisis caused by overproduction ushered in another downturn. "Is the hops industry finished?" asked Konrad Stohr, expressing his concern during the era of prohibition in the USA, which came to an end in 1933.

1930 The German Hop Traders' Society (DHVG) was founded. It would later be declared bankrupt in 1953.

1932 A great honor for Tettnang: 600 hop experts visited the town to attend the general meeting of the DHBV in Kolping Hall.

Hop growing in the era of National Socialism

1933 The German Hop Grower's Association was incorporated into the "Reichsnährstand", the body established by the Nazis to control all German agricultural and horticultural organizations. This was accompanied by the shattering of the professionally oriented management structure of the agricultural associations, which was replaced by politically motivated appointments (in place of elections).

The ultimate goal was to reduce the production area across the German Reich to 8,000 hectares with a yield of 180,000 quintals. The recommendation from 1939 to shut down 15 percent of the growing area became an official order in 1941.

The closures were forced – and were even more extensive than planned due to a shortage of workers. The brewers were able to

Intense activity near Tettnang's railway station: a typical image from 1937.

Picture: Tettnang municipal archive



set the prices. The Jewish traders, who had previously dominated the industry in many areas, were first forced out of business by means of "certificates of entitlement", and later dispossessed altogether. For example, as a result of the "aryanization" of the Laupheim-based Steiner company in 1937, Siegelhalle (weighing hall) 3 in Tettnang was "acquired" by a new owner – in reality, it was a forced expropriation. The "hop distributors" were required to fill the vacuum and the "free trade" was banned from offering hops for sale to the DHVG.

1934 Oskar Adorno retired nolens volens for health reasons. Otto Martin from Wolfzennen became the leading authority in Tettnang and a member of the DHVG leadership.

1936 Checks of the growing areas began. These were associated with a trend towards "varietal cleansing", which lead Otto Martin to proclaim: "We exclusively grow Tettnang early hops, and are therefore a growing area for high-quality hops". The request to eradicate the Striesselspalter variety prompted differing reactions from the growers.

1937 The German Hop Growers' Conference attracted around 2000 guests to the Montfort town over three days in August. At this time, eight hop varieties were being cultivated in ten cultivation areas throughout the whole of Germany. So-called "brown vocabulary" was also often heard – for example, in reference to the miserable hop prices of the previous years, it was claimed that "the libertarian-Jewish interlude" was finally over.

1937 The officially certified areas in Baden were added to the Tettnang area, which, then as now, included areas in the area around Ravensburg and Lindau. Statistically speaking, the Tettnang hop-growing area now contained 2.3 million hop plants on 700 hectares (586 of which were in Tettnang itself) and 1329 planters. This year also saw a record harvest of 26500 quintals. As a result, the calls to clear some of the growing areas grew ever louder – anyone who refused would be taxed 20% of their earnings. The measures taken against the Striesselspalter variety were equally severe.



In 1940, Adolf Locher from Missenhardt acquired the first narrow-track tractor that was suitable for use in hop gardens. He even used it during the period of occupation – the license plate "FW" stands for French Württemberg.
Picture: Locher, Missenhardt

1938 The conflicts escalated, the "grubbing up" of some fields did not appear to be entirely effective. "Violations of the cultivation regulations" could lead to a sales ban on the harvest – this could be avoided by means of an "atonement". In Tettnang, 160 growers were forced to pay fines totaling 60,000 Reichsmarks. One of them, Johann Sauter, filed a claim for damages against the German brewery association. The following year he received financial support from 40 growers – and won his case at the district court of Ravensburg in 1940, prompting a small (victory) party in Obereisenbach.

1938 On January 24 (according to the entry in the district court register), Tettnang complied with the compulsory establishment of the Hop Growers' Association. Otto Martin served as chairman, with Hans Landerer as his deputy and Josef Ade as CEO. However, by June new leadership was already in place – in the form of new chairman Robert Zumbiel from Apflau together with his deputy Landerer and CEO Stöhr.



Shortly after the Second World War, hop cultivation was once again intensified in Tettnang – as shown here in a picture from 1947.
Picture: Tettnang municipal archive

1940 In Missenhardt, Adolf Locher acquired the first narrow-track tractor that was suitable for use in hop gardens. A similar vehicle was soon in use by Alois Locher in Untereisenbach.

1942 The official request remained in force: 15 percent of the growing area had to be shut down and, if possible, used for potato cultivation. This was expanded to 30 percent the following year. However, the total cessa-

tion of hops cultivation that was planned for 1944 was no longer on the table.

1944 In order to "bring in" the harvest of approximately 10,000-quintals, up to 1,100 boys and girls aged ten and over reportedly worked in the hop gardens.

New beginnings are always painful

1945 At the end of the war, a modest harvest of 7,000 quintals was gathered from just 250 hectares. The early post-war years were characterized by shortages of manpower and materials, technical innovations with advancing mechanization, and the delivery of the harvest as "compensation" to the French occupation force at a fixed price of 260 Reichsmarks. In February and March 1946, more than 100 railway wagons containing hops left the Montfort town headed for Strasbourg.

1946 The rationing of machinery, fertilizer and fuel left hop cultivation in a desolate state. The shortage of wire was so acute that, on the day it was issued in 1947, the police had to control the traffic on Montfortstrasse in order to cope with the rush.

1947 The first growers' meeting for five years ensured a jam-packed public house. In the course of reestablishing the Hop Growers' Association, Adolf Locher from Missenhardt was elected as chairman and Josef Häfele from Hirschach as his deputy. This drought year produced a record low harvest of 4700 quintals, which were, however, certified as first-class quality.

1948 The first normal year, since there was no quota and no purchase by the DHVG. But then heavy hail in June resulted in the loss of one third of the harvest. The high quality of the remaining 4000 quintals was once again emphasized.

1949 The turning point for the hop industry: Beer production grew enormously (and would double again between 1949 and 1952). The federation of German hop growers (VdH) was founded in Mainburg under the leadership of chairman Josef Piechl and his deputy, Adolf Locher (until 1959).

Elfriede Momm (married name: Wiegand), the daughter of the leaseholder of the Kaltenberg estate, was crowned as the Hop Queen during the inaugural Tettnanger hops and children's festival, which was conceived as an extension to the annual hometown festival in Tettnang. The latter had been a huge success in 1948 on the occasion of the town's 650th anniversary. The event included fruit and hops exhibitions, which were seen by some 50,000 visitors. On display were six hop varieties from the registry trials conducted by Adolf Locher – the Striesselspalter variety was once again among them.

1950 The Tettnang growing area remained at 468 hectares, all dedicated to early hops. Local representative Hermann Tauscher waged war against the more profitable, yet lower quality Striesselspalter variety (in 1953 the question was again raised as to whether it qualified as quality hops). Prices reached 850 marks in the course of a run of higher prices that ended in 1953. Consequently, the wages paid to the workforce of around 3000 pickers became a major issue.

After five years, a Tettnang beer brewed with Tettnanger hops once again became available when the Krone brewery launched a Märzen beer with 14 percent original wort.

1951 While the appearance of "brown cones" lead to emergency picking in July, in 1952/53 the first signs of leaf curl appeared in the growing area, which now covered 630 hectares. This causes the shoots to remain in a growth phase and thus delays flowering. From 1956 onwards, Dr. Karl Nuber from Neukirch-Dambachhof was commissioned to investigate the cause. Tiny viruses were discovered, for which there was no antidote. However, zinc-based supplements proved effective – it was established that the leaf curl was caused by a nutrient deficiency.

1953 Pest control was becoming an ever more significant issue. An exhibition and demonstration of machinery and equipment dedicated to this subject took place in Tettnang. In the fall, the newly designed agricultural school was inaugurated (its first headmaster was Konrad Stöhr). Affiliated to the school was a specialist department for hop production with its own laboratory and hops farming class, which was financed by



Happy moments: When it was time to head home after the harvest, the pickers tied their headscarves to the flag.
Picture: Hop Museum archive





In 1960 the first "Allaeys" picking machines arrived at Tettnang railway station (top picture). Meanwhile, at Josef Huchler's farm in Tettnang, the first prospective customers were shown how to operate them. *Pictures: Elbs, Kau*

the growers who each owned a 75,000-mark stake. Until 2000 (when it was relocated to Markdorf) it remained in a new building on Weinstrasse – today, the same building is home to the regional vocational training college for the hotel and restaurant trade.

1954 Following the bankruptcy of the DHVG, Bavaria became the leading light among the hop processing cooperatives. In Tettnang there was initially restraint: Only 100 growers attended the founding assembly in May 1955 and only 30 of them were prepared to participate. Shares were issued at 300 marks per hectare. The local HVG was supposed to remain in existence until 1987, when it would dissolve itself.

The green-golden years

1955 Mayor Gnädinger tackled the shortage of pickers with an appeal in the Schwäbische Zeitung newspaper. His strategy was successful – 444 Tettnang students joined the workers and contributed around one-tenth of the harvest. This emergency served to hasten the introduction of machinery.

1956 The first hop picking machines arrived. Due to the high acquisition costs, four picking communities pioneered the use of the new technology – those led by Josef Huchler, Eduard Adorno, Bernhard Locher and the Holzwarth brothers (in Dietenhofen bei Berg). On August 24 the "Day of Kaltenberg" was celebrated – the festive opening ceremony was attended by the machine's English designer, Mr. Hinds.

In spite of all concerns about the purity of the hops, in 1961 half of the yield was harvested mechanically, the following year this figure rose to two-thirds. By 1968 there were 417 machines in Tettnang – fully mechanized picking had arrived.

In the film "Hot Harvest", Tettnang and its hops were immortalized on celluloid. In the summer, more than 150 Munich-based actors arrived in the city to take part in the filming.

1957 The importance of hops for Tettnang was shown in the newspapers via regular columns devoted to the hop growers (which also included the official market report). On weekdays, the latter was also broadcast over the radio – from 5.55 pm to 6.00 pm on the "Süddeutsche Rundfunk" station.

Solutions to the overproduction crisis

1958 The German Federal Constitutional Court ruled that area quotas were unlawful. The restrictions on the growing areas were dropped – against the will of the federation of German hop growers (VDH), whose warnings against overproduction would soon be proven correct. In Tettnang, the growing area grew from 700 to 800 hectares.

1959 The overproduction crisis resulted in a breakthrough for the supply contracts. Ever since, the "pre-harvest contracts" have existed in opposition to the hops sold on the spot market – however these contracts were initially only adopted hesitantly, especially during low-price years. While the contracts accounted for as much as 70 percent of the yield in Hallertau in 1960, in Tettnang, whose growers preferred to "wait and see", they only accounted for 12 to 15 percent of the hops market. However, by 1970 this figure had risen to around 80 percent, and it is about 90 percent today.

Eduard Adorno from the Kaltenberg estate was elected VdH president, a position he held until 1963. Subsequently, he would increasingly devote himself to political lobbying in Bonn and Brussels on behalf of the German hop industry.

1960 The price decline was to be counteracted everywhere via hops auctions: "Fair prices for high-quality goods" was, according to Adorno, the goal of these "self-help campaigns", which began in Tettnang on

September 6, and in which the trade and breweries (with their overflowing warehouses) were reluctant to participate. Nevertheless, under the direction of the central agricultural cooperative of Württemberg (WLZ), an average price of 425 marks was achieved at auction. Tettnang alone persevered doggedly – however, of the six auctions that were held in the town in 1961 and 1962, three proved unsuccessful and were abandoned.

1961 Anxiety increased due to surging hop imports from Yugoslavia – these were subjected to import levies by the federal government in 1962. Only in Germany, argued Adorno, was the market completely liberalized, i.e. not supported by government subsidies. In a "landmark for the hop industry" he commissioned a certified expert to produce an officially recognized report, which set the cost price for hops in the Hallertau at 350 marks. In Tettnang, according to the report, the price should be even higher.

The new technological era

1962 New plants were built, along with a host of innovations such as the power sprayer and a new device for hanging climbing wires. In 1964, Karl Selinka wrote a full-page article in the Süddeutsche Zeitung: "The hop industry enters a new technological era".

1964 Hermann Tauscher succeeded Adolf Locher as chairman of the Hop Grower's Association. His deputy was Ernst Bernhard from Kressbronn. In 1969, Benedikt Hofer from Hinterreute joined the organization as deputy chairman. And while the "Genossenschaftliche Hopfenverwertung Tettnang" (Tettnang hop traders' cooperative) was founded via a merger of the WLZ and the HVG, the hop pickers' cooperative in Obermeckenbeuren announced that it was debt-free after just three years (despite purchasing a picking machine and a belt dryer).

1965 A three-day congress of the European Hop Growers' Convention (EHB) with 200 delegates was a highlight for Tettnang – which was also reflected in an appeal by the towns' mayor that "flags should be flown". In 1967, EHB vice president Eduard Adorno was appointed as a federal secretary of state in Kiesinger's cabinet, before serving as state minister for Federal Council matters from 1972 until 1980. In 1979, he sold the Kaltenberg estate to the Liebenau Foundation after all the hops had been torn up.

1966 The WLZ opened its eight-storey hop tower. At an open day, 2000 interested visitors arrived to learn all about how hops are prepared as merchandise.

1967 A bumper crop landed on a saturated market – resulting in another crisis year in which global prices collapsed. Tettnang now had 914 hectares and produced 35,500 quintals – at an unusually broad price range of 550 marks for contract hops and 200 to 300 marks for "free hops".

1968 An amendment to the German beer tax law ("Biersteuergesetz") ended a year-long, often heated debate: The use of hops extract was also permitted in Bavaria and Baden-Württemberg. Half a century later, just five percent of the harvest is used as cone hops, while 95 percent is processed into pellets or extract.

In another example of the influence of "big politics", the newly introduced value-added tax was also applied to hops. With an estimated order volume of 120 million marks, the question of how to treat the old "30,000 contracts" proved contentious.

1969 Anton Schmidberger succeeded Konrad Stöhr as a member of the state agriculture council (Landwirtschaftsrat). However, officially he was no longer permitted to hold the title of CEO, and instead served as a specialist consultant.

1971 The EEC market regulation for hops was published before coming into force in 1973. This required the use of exact variety denominations – triggering concern in Tettnang that this would cause the hops' origin to be lost. The new regulation also demanded separate harvesting, drying and storage of the hops. Germany pushed for a ban on mixed hops, resulting in the EC hop market regulations of 1978. These prohibited the mixing of different vintages or varieties,



The first trials with low-trellis systems began in Tettnang in 1993. ***Picture: Willi Moosherr***



Dr. Bernhard Locher († 2006) was chairman of the HPV in turbulent times and led the growers towards a stable future. ***Picture: PR***

or of identical varieties from different growing areas.

The new management structure in Tettnang saw Ernst Bernhard appointed as chairman and Bernhard Locher as his deputy. The following year, two more members of the Locher family (Josef and Richard) flew the colors brilliantly for Tettnang together with Alfons Hund, when the three young farmers beat the winemakers from the Remstal in the "Wine versus Beer" quiz game on Southwest German Radio (SWR).

Active in times of structural change and environmental protection

1973 The state purchased a plot of land in Strass (between Prestenberg and Gornhofen, Tannau) and established the Strass research farm on 6.5 hectares. The aim of the project was to grow uniform Tettnang early hops – with trial harvests. Additional goals included increasing yields and improving quality using an initial crop of 6,000 hop plants. In the first ten years, 150,000 virus-free root cuttings were delivered.

1973 The conversion from net to gross growing areas meant that, in addition to the headland, the space within the supports would now also be counted. Statistically, this resulted in a huge increase to 1456 hectares (1972: 1038), of which are 258 were unproductive.

1973 The elections held at the Annual General Meeting resulted in the following appointments: Bernhard Locher was chairman, Alfred Elbs from Dieglishofen was deputy chairman and Benedikt Hofer was third chairman. Until 1984, Locher's primary focus would be the quality of the Tettnanger hops.

A date that is eagerly anticipated by the whole industry: the hop forecast (in this case, for 2015) ***Picture: Mark Hildebrandt***



1974 Tettnang growers were annoyed that the EEC aid scheme continued to exist in its current form. Among other things, it continued to subsidize the Striesselspalter hops, which were popular in France. Furthermore, Hallertauer, Spalter and Saazer hops were all being subsidized to a much greater extent than Tettnanger – and in a period of overproduction, in which the growers' hopes rested on the export market.

1975 The Hop Producers' Association of Baden-Württemberg (Hopfen-Erzeugergemeinschaft Baden-Württemberg) was founded in Tettnang. Notably, the new association also included the trading companies (five companies, including the WLZ led by Roland Hermann) among its ranks. Its senior management remained the same as that of the Hop Growers' Association.

1976 Structural changes manifested in shrinking growing areas up to 1978 – to 1100 hectares, which corresponds to approximately 1500 football fields. The EC grubbing-up aid was also a factor here (combined with a miserable free hops market), resulting in the number of growing companies falling to 536. These facts prompted Bernhard Locher to launch an appeal: "We must not fall below a quantity of 35,000 quintals, otherwise we will no longer play any role in the market." The quality and variety of the hops being grown remained a key issue – at that time the growing areas were divided between 2/3 Tettnanger and 1/3 Hallertau hops. In addition, there were increasing complaints concerning a lack of insurance against crop damage from hailstones – reportedly only 178 farms totaling 254 hectares were insured.

1980 The warnings by the VDH against area extensions barely applied to Tettnang (1160 hectares). However, the growers were badly hit by the worst hailstorm in a century, which decimated around 24,000 quintals of the harvest – the yield per hectare fell to the lowest level since shortly after the Second World War.

1981 Tackling the plants' premature wilting became (and remained) the top priority. However, the "Tettnanger Früher" variety demonstrated strong defenses against the fungus, which was chemically untreatable.

1982 The effects of the restrictions on pesticides became abundantly clear. However, Dr. Bernhard Locher, the chairman's son, was on the case. He wrote his doctorate on crop protection technology, in particular the application of sprayed pesticides. The goal was to establish Tettnanger hops as a "high quality product" with a view to exports – the primary focus here was Japan, which received one third of the Tettnang harvest.

1983 The year that Peter Heidtmann described as the "last normal year" in "Green Gold" marked the breakthrough of Tettnanger as a noble hop –- confirmed by a "price gap reflecting the quality" of 150 marks per quintal compared to the other aroma hops. However, its status as a noble commodity depended on ensuring corresponding levels of internal quality – Locher and Schmidberger repeatedly stressed the need to take care during picking and drying. The requirements for export

were clearly set out – the hops had to be free from lice and spray residues.

1984 At the harvest meeting, Bernhard Locher (+ 1999) was replaced by Dr. Bernhard Locher as HPV chairman. The rest of the management team remained unchanged – with Alfred Elbs (until 1989) and Hans Weishaupt (from Gornhofen) as deputy chairmen, as well as CEO Anton Schmidberger and treasurer Hans Stehle.

America sets the direction

1985 "Zero spray residue" was the requirement for exports to the USA following a period of transition agreed during the previous year. There were harsh words from Dr. Bernhard Locher in response to an apparent lack of care with the harvest: "We will not let shoddy batches like these destroy our good reputation" – he was referring to a harvest yield with an unacceptably high proportion of foreign matter (six percent). This was especially important since the USA also had a clear edge in this regard. Czechoslovakia bore the brunt of the return deliveries.

1986 This year, the USA closed ranks and refused to import German aroma hops. This bombshell hit the growers hard, especially since the news was published shortly before the harvest. The US authorities had warned the country's breweries against using hops that contained pesticide residues, since these were banned in the USA. Such events were interpreted as a "secondary theater of action" in a trade war between the EC and the USA whose primary focus was on soy and oilseed products.

A feeling of exasperation turned to sighs of relief when traders bought up the entire Tettnang harvest. In addition, the USA agreed to resume German hop imports in 1987, albeit under stringent conditions, for which the producers, researchers and state began preparing.

1987 There was increasing uncertainty among the growers about how to protect their high quality product. According to Bernhard Locher, it was a case of "trying everything possible to the limit of one's endurance". Only eight pesticides were approved in both the USA and Germany – none proved effective against the spider mite. Adherence to the American spraying sequence was of critical importance. This was both more expensive and more labor-intensive, which led the growers to proclaim: "Then it had better be worth the trouble". In other words, the hops needed to be exported. Which they were – in 1990 exports accounted for around 50 percent of the harvest.

In a positive development, a Peronospora warning system was installed, which enabled the growers to only spray when there was a risk of infection. This resulted in a significant reduction in fungicidal treatments. The procedure was refined in 1990 by PhD student Willi Moosherr and was used extensively from this year onwards.

In the first year alone, Dr. Moosherr's telephone answering machine received 4750 calls from interested parties.

1989 The Federal Cross of Merit was awarded to Anton Schmidberger. "Hopfen-Dädde" ("Hop Mother") and "Hopfen-Papst ("Hop Pope") were among the nicknames given to this specialist adviser (successor: Franz Wöllhaf) and head of the state agricultural office, who died in 2011. The new HPV treasurer was Alois Veser (replacing Hans Stehle). Karl Locher from Untereisenbach replaced Alfred Elbs as deputy chairman.



Green on the outside. And on the inside? From the mid-1980s onwards, the content of the hops was influenced in particular by regulations from the USA. ***Picture: Hopfengut No20***

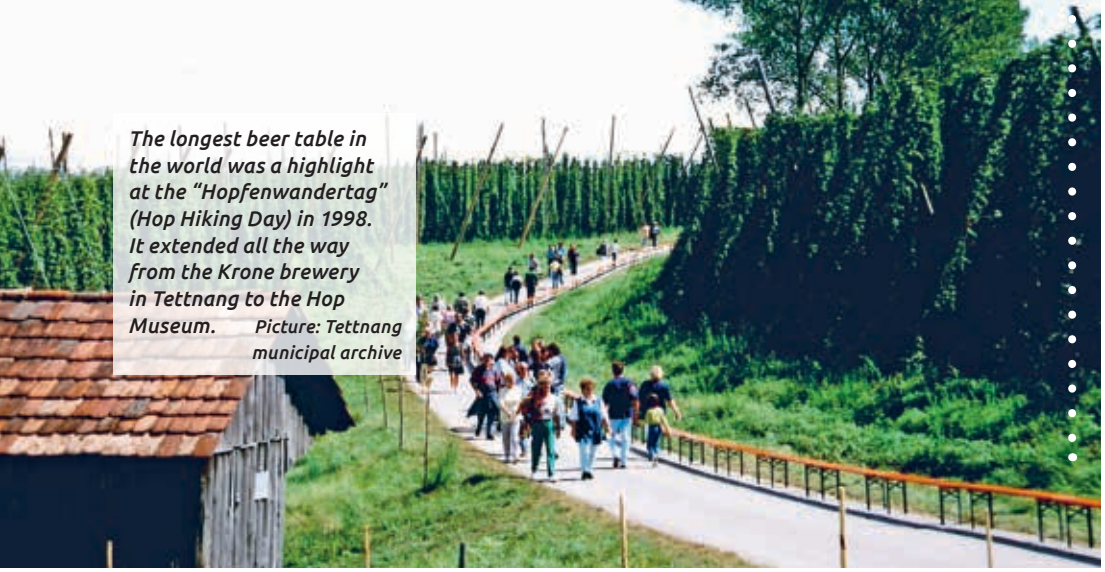
1989/90 There was fresh uproar on the subject of "kyanising", the wood preserving process used for the hop poles. These had long been impregnated with mercuric chloride as protection against rotting, as per John Kyan's patent of 1832. An accident during a preparation process made headlines and resulted in the previously approved procedure being officially banned. The scaremongering overlooked the fact that there was no evidence of mercury being "washed out" into the soil.

1990 A new EU regulation provided the trigger for the Strass research farm to focus on fertilizer and crop protection methods, with the aim of reducing the nitrogen content both in the soil and in drinking water.

1991 A spraying scandal ushered in another turbulent period. A Tettnang-based agricultural products dealer was discovered selling imported chemical substances under German brand names.

1992 Peter Bentele from Wellmutsweiler became the first organic hop farmer.

1993 "Hop cultivation sees itself as a pioneer for radical change" – the Süddeutsche Zeitung newspaper's take on the arrival of integrated production techniques, which had been used in fruit production since 1991. The hop growers followed suit on half of the growing area, which at that time was 1500 hectares. At the same time, the growers reduced their use of pesticides and stopped using herbicides for weed control.



The longest beer table in the world was a highlight at the "Hopfenwandertag" (Hop Hiking Day) in 1998. It extended all the way from the Krone brewery in Tettnang to the Hop Museum. *Picture: Tettnang municipal archive*

Tettnang emerged as a pioneer in trials with low-trellis systems. Also of note: The HPV set up its own quality laboratory under the direction of Dr. Willi Moosherr (currently Manuel Geiser). The "Neutral Quality Assessment" (NQF) represented a quantum leap in yield quality. It was therefore fortuitous that exports to the USA were simultaneously gaining momentum. However, the high production costs in Germany were a cause for concern.

The Jubilee Year – the starting point for new ideas and developments

1994 The 150th anniversary of the start of large-scale hops cultivation was celebrated in style. Among other highlights, Anita Schiller was crowned as the Hop Queen and Monika Rauch and Renate Sauter as the Hop Princesses during an anniversary evening celebration at the town hall in August.

1994 A trip to Japan by a delegation from Tettnang naturally included visits to the Asahi and Kirin breweries. However, this journey also marked the end of a development that had begun in the late 1970s. At that time, the Japanese city of Omagari had been looking for a German partner for its hop trade. Eduard Adorno had arranged the first visit by Omagari's mayor to Tettnang in 1978 – this initial contact resulted in further exchange visits that lasted until 1994.

1995 The Hop Museum in Siggenweiler opened its doors.

1996 The first "Hopfenwandertag" (Hop Hiking Day) took place on August 5. Ten more would follow. The opening of the "Hopfenlehrpfad" (Hop Training Trail) took place on Ascension Day.

The EU pushed the industry forwards: The new Hop Act, which replaced the old version from 1929, gave countries the power to create their own regulations related to certification.

1997 A year of records that stand to this day – at 1,659 hectares, the growing area was the largest in Tettnang's history, as was the harvest of 52,010 quintals. The increase was linked to strong export demand from the USA and Asia.

1998 The second Tettnang "Hopfenwandertag" featured the longest beer table in the world, which even made it into the Guinness Book of Records.

The ups and downs of the hop cycle continued: A miserable market was having an impact, and culminated in an EU grubbing up program (EUR 480 per hectare) that would run until 2004 as a means of preventing overproduction.

Konrad Thanner's invention achieved the breakthrough – his space-saving rectangular bales consigned the old round bales to history.

1999 Stormy times ahead: Anheuser-Busch, the biggest end customer, announced its exit from the market, declaring its intention to buy Hallertauer Mittelfrüher hops exclusively from the eponymous growing area. Meanwhile, Tettnang's growers established their own youth organization called "U30".

Diversified for the uncertainties of a new millennium

2000 A groundbreaking decision was made – to include not only the regional cultivars Tettnanger and Hallertauer Mittelfrüher, but also varieties from the range of cultivars developed in Hüll, as well as flavor hops (since 2012).

2001 A heavyweight "player" emerged when the Hop Producers' Association of Baden-Württemberg and the Hop Traders' Society Hallertau (HVG) were merged under the name HVG e.G. The advantages for Tettnang's 298 growers included more transparent markets as well as greater access to hop processing and the global market.

2003 Tettnang's growers responded to the oversupply crisis by shutting down 13.4 percent of the growing area.

2004 A delegation from Tettnang headed to America to visit Anheuser-Busch – and with success: Anheuser Busch 3000 and the Boston Beer Company ordered 4,000 quintals of Tettnanger hops for 2006.

The pre-harvest forecast was conducted in the gondola of a zeppelin. It predicted pure "green gold" in a wonderful year for hops, in which stocks of aroma hops were starting to run out. In addition, the mark/dollar exchange rate became more favorable for German hop growers.

2006 The Hop Growers' Association, town council and Hop Museum arranged an elaborate "Hop Sow Parade" to mark the fifth "Hopfenwandertag" (Hop Hiking Day).

In October, Dr. Bernhard Locher died aged fifty-three. The man from Tettnang's Loderhof district, later from Siggenweiler, had become "Mister Tettnang" in the eyes of the Americans. Johann Heimpel became the next chairman of the Tettnang Hop Growers' Association, followed by Wolfgang Ruther in 2015.

2007 Hops were crowned as the "medicinal plant of the year". It was therefore fitting that scientists from 13 nations arrived in Tettnang for a congress of the international hop office.

They heard about the year's weak harvest and empty warehouses at the breweries,

which led to sharply rising prices and favorable pre-harvest contracts.

2008 Realizing the importance of responding to climate change, the HVG promoted the use of irrigation facilities.

2009 As part of a PR campaign designed to bolster their image and industry relationships, Tettnang's growers cycled to the hop-growing congress in Strasbourg. Meanwhile, the first German Hops Day brought a large number of international brewery customers to Tettnang. In addition, thousands of visitors had a good time in and around the Hop Museum at the inaugural Tettnanger hops jamboree.

2010 After seven years of testing, Tettnanger hops received EU-wide trademark protection – as one of the first German products ever to be awarded a "Protected Geographical Indication" (PGI).

2011 At Tettnang New Palace, the Boston Beer Company presented a new beer ("Alpine Spring") which was brewed exclusively with Tettnanger hops. This major customer from Boston had thus earned the right to use two new labels – "Tettnanger Hops inside" and "Tettnanger hops for the finest beer enjoyment". Both were created by the Tettnang Hops Growers' Association for exclusive use by breweries that use the local hops.

Crop protection monitoring – including tests for 545 active ingredients – was introduced and soon in high demand:

2012 A furore ensued when traces of the pesticide Captan (unlike in fruit production, this was banned on hops) were found in harvested hops. Ona more positive note: The internal safety system worked correctly and ensured that the resulting beer was not affected. The contaminated lots – approximately ten percent of the harvest – were removed from circulation.

The cause was identified – certain batches of the approved fungicide Folpan were significantly contaminated with Captan. The pesticide manufacturer's insurance paid compensation. More importantly: "The Tettnang brand will not be damaged," declared HPV CEO Jürgen Weishaupt.

Hops are "in"

2012 By now, even the names of the varieties of flavor hops (Mandarina Bavaria, Hüll Melon, Hallertau Blanc, Polaris) had become widely known – the craft beer movement was booming.

Several hop gardens fell on hard times due to a severe storm shortly before the harvest – generous acts of solidarity from growers' groups and the local population revealed the deep roots of the hops community in Tettnang.

2013 Former Olympic ski champion Markus Wasmeier brewed beer with Tettnanger hops.

2014 This year's harvest brought good prices and high yields. However, production costs were also rising, for example due to the introduction of the minimum wage in agriculture.

2015 Baywa, a Bavarian company that operates in the agriculture, building materials and energy sectors, invested four million euros in a pellet plant in Tettnang.

2016 Good news: Hop Hiking Day attracted more than 20,000 visitors, a new record. Bad news: A hop hall in Gesnauwiesen burned down; the resulting damage was estimated at one million euros.

2017 The growing area was expanded by 5.5 percent to 1353 hectares – requiring enormous investments in trellises and harvesting technology. The harvest amounted to 2270 tons, of which 977 tons (43 percent) were "Tettnanger". Also harvested (in tons): 556 Herkules, 224 Hallertauer, 117 Perle, 97 Hallertau Tradition, 81 Saphir, 40 Mandarina Bavaria.

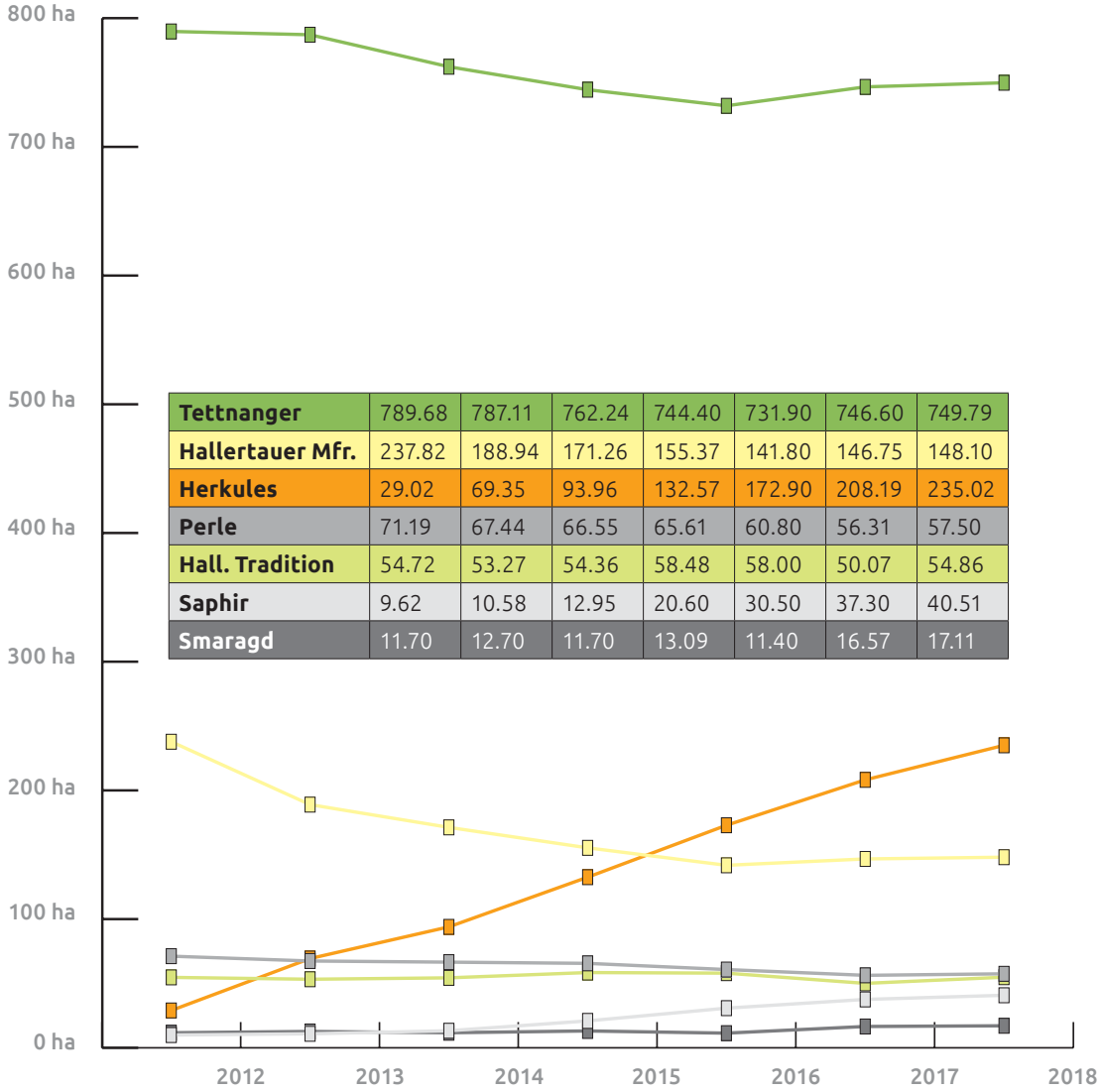
2018 Due to the very hot summer, the 132 farms harvested 2075 tons – on a slightly expanded growing area (1397 hectares). The yields and alpha-acid levels suffered during this dry year, further fueling the debate over climate change and irrigation. "What can be done in terms of plant breeding?" – in response to this, the powers that be are pinning their hopes on two new strains, the "89er" and "96er", which are still unnamed and in the initial phase of a large-scale trial with the aim of strengthening the trend towards the fine aroma varieties.

2019 The HPV will celebrate its anniversary year with a new website, an annual calendar and this commemorative publication, which will be issued at the Craft Beer Conference, a major industry gathering in Denver. After that, the focus will turn to the jubilee weekend of August 10/11. ■



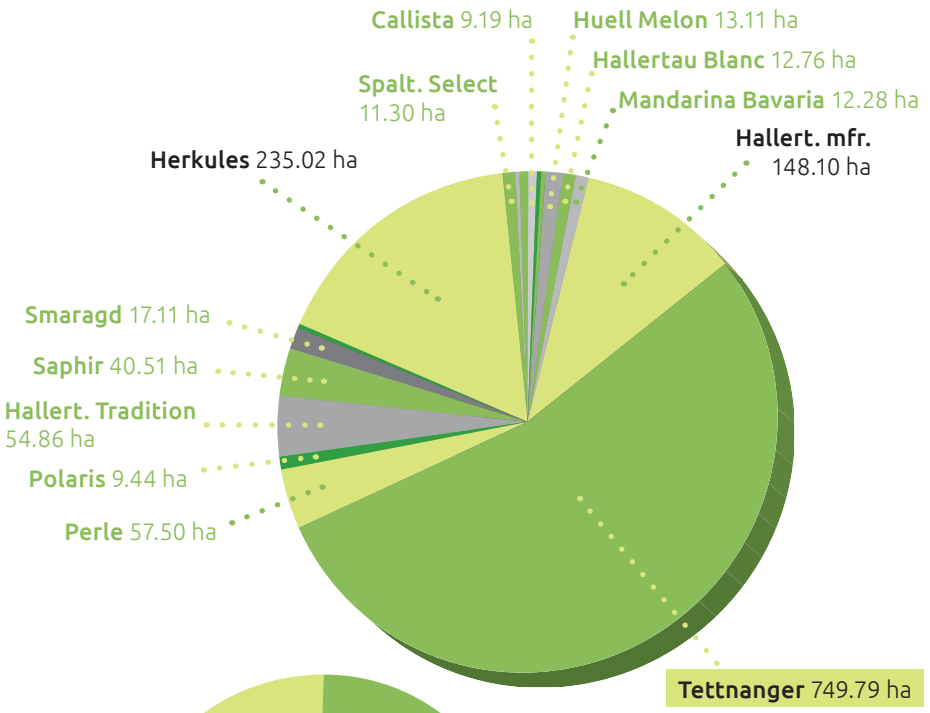
The enthusiasm for Tettnanger hops remained as strong as ever after the jubilee year. ***Picture: HVG***

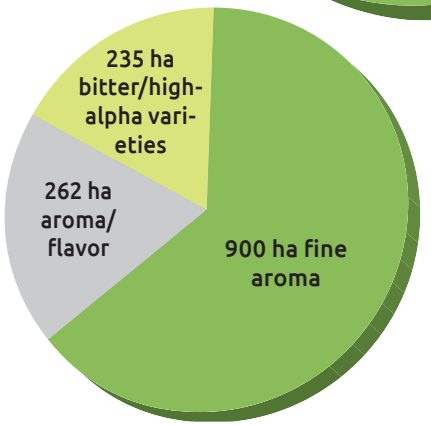
Development of hop varieties in Tettnang



Tettnanger	789.68	787.11	762.24	744.40	731.90	746.60	749.79
Hallertauer Mfr.	237.82	188.94	171.26	155.37	141.80	146.75	148.10
Herkules	29.02	69.35	93.96	132.57	172.90	208.19	235.02
Perle	71.19	67.44	66.55	65.61	60.80	56.31	57.50
Hall. Tradition	54.72	53.27	54.36	58.48	58.00	50.07	54.86
Saphir	9.62	10.58	12.95	20.60	30.50	37.30	40.51
Smaragd	11.70	12.70	11.70	13.09	11.40	16.57	17.11

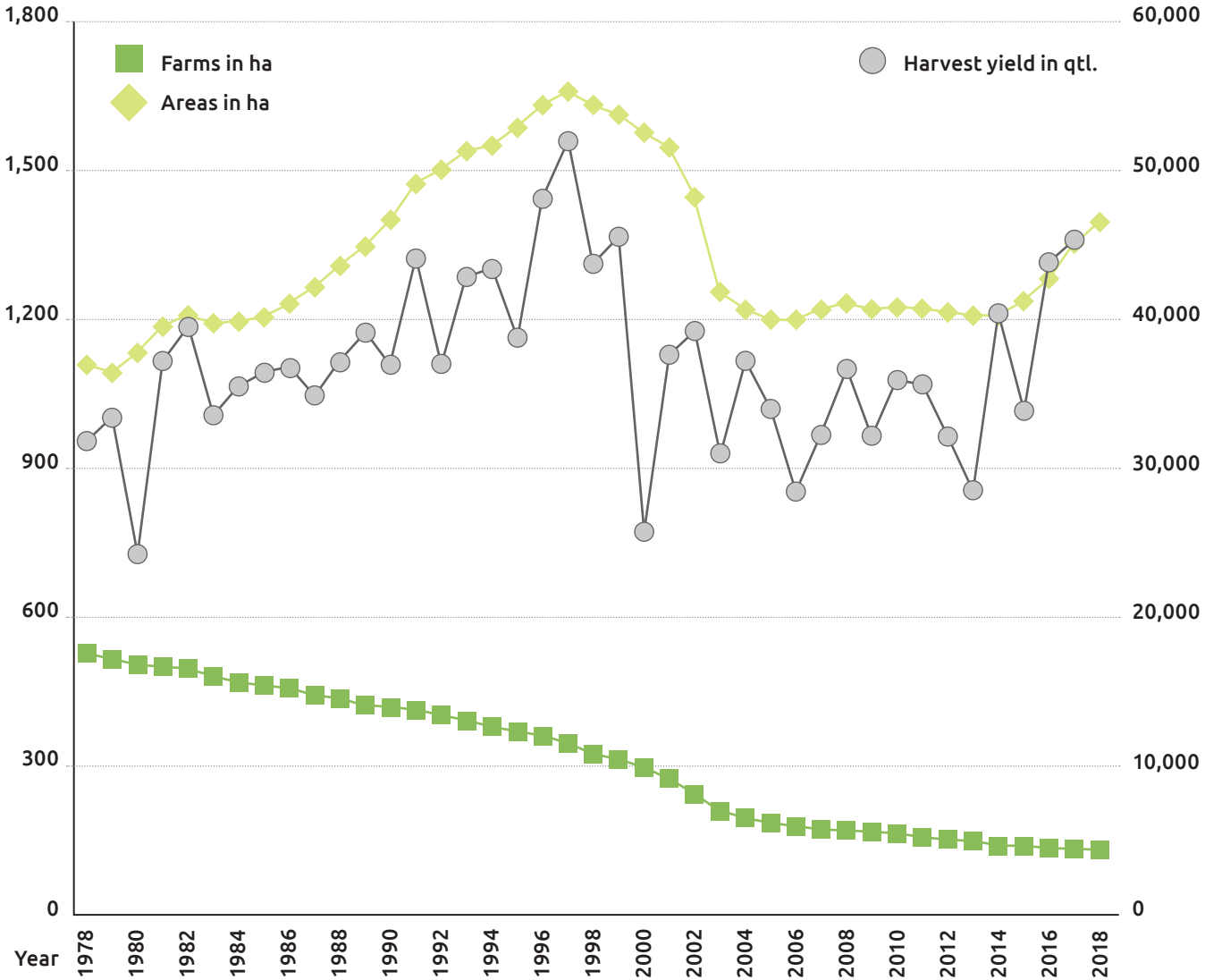
Variety distribution in the Tettnang growing region in 2018





Amarillo	8.25
Ariana	4.50
Cascade	4.15
Hersbr. spät	0.32
Opal	1.17
Monroe	3.63
Rottenburger	0.32
Hallert. Taurus	0.32
Comet	0.33
Other/breeding lines	2.90

Growing areas, yields and number of growers



Year	Farms	Hectares	Qtl.
1978	528	1,109	31,874
79	515	1,093	33,434
80	505	1,133	24,289
81	501	1,186	37,250
82	497	1,209	39,510
83	482	1,193	33,627
84	468	1,196	35,540
85	463	1,205	36,464
86	457	1,232	36,791
87	443	1,265	34,934
88	436	1,308	37,164
89	423	1,347	39,137
90	419	1,401	36,984
91	413	1,473	44,122
92	403	1,502	37,070
93	392	1,539	42,883
94	380	1,551	43,408
95	370	1,587	38,838
96	361	1,632	48,130
97	347	1,659	52,010
98	325	1,632	43,791
99	314	1,613	45,606
2000	298	1,577	25,791
2001	276	1,547	37,680
2002	244	1,447	39,275
2003	210	1,256	31,050
2004	196	1,220	37,255
2005	186	1,200	34,056
2006	179	1,200	28,476
2007	173	1,220	32,274
2008	171	1,233	36,717
2009	168	1221	32,224
2010	165	1,225	35,978
2011	157	1,222	35,671
2012	153	1,215	32,149
2013	149	1,208	28,594
2014	140	1,208	40,447
2015	139	1,237	33,898
2016	135	1,282	43,883
2017	133	1,353	45,409
2018	132	1,396	41,501

Within this "delicatessen" of regional cultivars, the Tettnang Tettnanger variety holds a unique position

Via ongoing selection and development, the local aroma hops have matured into highly sophisticated crops

They provide the basis for the mythical status of the local hops – the old regional cultivars, which have been used as a namesake for their respective growing areas during centuries of selection, continue to guarantee the noblest aroma hops. At the same time, however, it is becoming increasingly apparent that the survival of the regional cultivars as noble crops poses a unique challenge for each growing region – and often amounts to a balancing act.

Hallertauer Mittelfrüher, Spalter, Tettnanger, Hersbrucker Spät and Rottenburger Spät as well as the Saazer hops from Bohemia – these are among the most well-known regional cultivars, of which Tettnanger, Spalter and Saazer belong to the Saazer family. There is therefore a genetic relationship between these three fine aroma varieties. Probably originating in Bohemia (they were first documented there in 1348), they later arrived as root cuttings in the area south of Nuremberg and Lake Constance. They all contain large quantities of the hop oil farnesene, which belongs to the group of terpene hydrocarbons. While the latter are scarcely detectable in conventionally brewed beers, this is not the case with cold-hopped beers.

The regional cultivars represent growing areas in which typical area-related natural selection occurred in the hops due to natural obstacles (such as mountains) and their dispersal into delimited areas. In other words, the crops became increasingly uniform over time, homogeneity being a characteristic of the plants' successful propagation. In agricultural terms, the regional cultivars had prevailed and there was little need to grow other varieties.

Today, the regional cultivars, which include Striesselspalter hops for Alsace and Lublin hops for Poland, can also be found in other growing areas, with one exception: Tettnang Tettnanger thrives exclusively in the region near Lake Constance – this "delicatessen" has only opened its doors here.

At one time, the Rottenburger Spät variety had seemed doomed to extinction when, in 1968, the last hop garden in the growing area of Rottenburg-Herrenberg-Weil was consumed by the nearby town. For reasons of nostalgia, a single plant was spared. It was rediscovered a few years ago – since then, growers in Tettnang have been trying to give Rottenburger Spät hops a second life. Since 2014, Locher Hopfen (Ludwig Locher from Missenhardt) has cultivated the variety on half a hectare and sold the young plants.

But from where does the Tettnanger cultivar originate? It is believed that Spalter and Tettnanger arrived in southern Germany as root cuttings taken from the already popular Saazer hops.

The historiography contains no information about this. Instead, the various traditions have left room for speculation. What is known is that, 100 years ago, hops from Rottenburger, Hersbrucker, Wolnzacher, Hallertauer, Spalter and Schwetzinger root cuttings were grown in Tettnang.

Historically speaking, the former and latter varieties are prime candidates for providing answers to the question of Tettnanger's origin. Just like the early Tettnanger variety (i.e. from the mid-19th century), Rottenburger hops were considered very early hops that were harvested in mid-August. In addition, there are records of a thriving trade in hop seedlings in Rottenburg in the 1850s and 1860s.

Tettnanger's connection to Schwetzinger hops is based on a note attributed to Oskar Adorno. Around the year 1925, the president of the Hop Grower's Association made a distinction between the harvest of Tettnanger early hops from Saazer and Schwetzinger hops. The latter was referred to as "Old Tettnanger". Close contacts to Baden also existed due to another special



Every year the local noble crop proves its quality during the hop rating. ***Picture: PR***

crop – in earlier times, Tettnang had a reputation for growing asparagus from seedlings that were originally introduced from Schwetzingen.

Ultimately, however, this is really just "splitting hairs" – the Tettnanger regional cultivar nevertheless served as a name-giving variety which, through selection and ongoing development, has matured into the noble crop that is today valued so highly by the hop industry.

However, the story of Tettnang Tettnanger hops is neither a case of "sure-fire success" nor of mere historical legacy. Instead, it represents an obligation on the part of the growers to adopt a proactive approach towards the future. On the one hand, it will be necessary to increase both the crop's yield and its resistance to disease. On the other, however, this must be achieved without spoiling the variety's famously popular flavor and outstanding brewing characteristics.

Furthermore, this balancing act must be achieved in the knowledge that the worldwide significance of the regional cultivars is increasingly diminishing. There are a number of reasons for this – starting with the obsolescence of the existing stocks and including the requirements of new market segments (e.g., for the high-alpha range), as well as a study of the Saazer hop variety in the Czech Republic, which attributed its earlier flowering and decreased alpha-acid content to climate change.

Problems such as these are being confronted, for example, via crossbreeding – in the case of Tettnang, the goal is to further develop the regional cultivars. And to ensure that, as a trademark born of 175 years of hop-growing history, Tettnang Tettnanger can look forward to a promising future.

At the same time, Tettnang's "variety basket" has also been expanding for a decade and a half. In 2018, 25 hop varieties were cultivated here – more than in Spalt (20) and Elbe-Saale (17), but fewer than in the Hallertau (32). To put this in geopolitical terms: according to the international hop cultivation bureau, 272 hop varieties are grown worldwide – 87 in the USA and 41 in Germany.

Diversification alone is not the panacea. Of course, the local producers are well aware of the success of the Herkules variety (grown on 235 hectares in Tettnang, almost 17 percent of the total growing area), as well as Polaris and the flavor hop varieties, even though the acreage dedicated to the latter decreased in 2018.

At the same time, however, they rely on the traditions for which the regional cultivars stand (and not merely as emblems) – the acreage dedicated to both Hallertauer Mittelfrüher (from 146.7 to 148.1 hectares) and Tettnanger was also increased. The latter totaled 749.8 hectares in 2018, 3.2 more than in the previous year. In other words, 53.7 percent of the total acreage is currently being used to grow Tettnang Tettnanger hops.

Too much? Not enough? To find the answer, it is helpful to take a look "over the fence" – at our neighbors. In the Spalt growing area, Spalter (29.8 percent) and Spalter Select (23.3 percent) together account for approximately the same percentage as the Tettnanger variety in our region. And in the Hallertau, Herkules (35 percent, just under 6,000 hectares) and Perle (16 percent) are far ahead of Hersbrucker Spät and Hallertauer Mittelfrüher (at 5.5 and 3 percent respectively).

What does this mean? Simply that each growing area does things differently. And that they all respond to the market, while knowing that "the market" is just people.

People who have been passionate about Tettnanger hops for 175 years ... ■



A key feature of the landscape: The success of the hops grown in and around Tettnang is based on the quality of the Tettnang Tettnanger cultivar. ***Picture: tt-bilder.de***

"Robber barons of hops"

The fierce competition that used to exist within the hop trade is revealed by a report that details how the first hop seedlings came to Württemberg and Baden. This did not occur until the beginning of the 19th century. Back then, the root cuttings were still being guarded as a Bavarian state secret to ensure, for example, that they could not be cultivated in Württemberg. For a while, the theft of hops was even punishable with the death penalty. A doctor and "hop robber baron" named Joseph Kehringer from Schwäbisch Gmünd changed all this in 1801, when he stole a bunch of root cuttings from the Spalt growing area – and then had to ride for his life. Later, after creating a trial farm with the seedlings, he sold the root cuttings to Rottenburg and also to Tettnang for a handsome profit. In Tettnang, the first hop gardens were established from 1844 onwards – literally in people's gardens at that time. The rest, as they say, is history ...

A partnership that benefits everyone

Tettnang hop growers and their close links to hop research

Globally, hop cultivation is currently being investigated by around 80 scientists at universities, institutes and hop trading companies in Germany, the USA, the UK, Australia, New Zealand, Japan, Slovenia, Poland and the Czech Republic. As well as responding to climate change and tackling new pests, the researchers are also tasked with identifying new trends in plant breeding.

The scientists describe their mutual collaboration as very good – they all know each other and value each other's work. The hop growers in Tettnang base their work on research conducted at the Strass trial field, the University of Hohenheim and the Hop Research Center Hüll, which is operated by the Bavarian State Research Center for Agriculture and the Society for Hop Research – three centers of excellence whose work benefits all concerned. ■



Tettnang's hops thrive in a charming and fertile landscape.
Picture: tt-bilder.de

A mediator between science and practice

The Strass trial field for hops is an important institution for the growers

By Franz Wöllhaf, Bruno Bohner and Gabriel Bader

By the time the trial field for hops was established in 1973, Tettnang Tettnanger already held a special position among the various hop varieties. It played the lead role in defining the characteristics of the region's cultivars. An important task at the Strass trial field, a facility operated by the state of Baden-Württemberg, is to maintain and improve this variety within the local inventory. The trial field's goals include increasing the yield level and stabilizing the alpha content as well as improving the hops' agronomic characteristics through the selection of individual plants. Currently, 18 clones from the trial field are undergoing a fourth cycle of testing. Each clone originated from a mother plant grown in a trial plot, to which it is genetically identical.

At the same time, a cross-breeding program directed by the Bavarian State Research Center for Agriculture using mother plants of the Tettnang Tettnanger variety is underway with the goal of finding unique specimens that match this variety's typical flavor profile while being more productive and problem-free in terms of cultivation.

In order to serve the needs of the hop industry and the Tettnang growers, additional breeding lines are being investigated in Hüll. We currently have six under test, including three high-alpha types. It usually takes ten years for bitter and fifteen or more years for aroma varieties to progress from breeding to market readiness.

For a long time, the aim was to plant Tettnang Tettnanger exclusively. Since the early 2000s, however, experiments with other varieties have begun on the hops trial field, starting with Hallertauer Mittelfrüher, Magnum, Taurus, Perle and Tradition. Generally speaking, the larger the farms become, the broader their range of hops – some growers have up to ten varieties in their cultivation program. This brings some advantages, particularly when it comes to work scheduling, as there are different times for cutting and harvesting. The research campaign may be extended.

The experiments from the trial field have shown that each variety has its own distinct "character traits". It is therefore important to learn how to handle each variety correctly.

We try to find out what works and where the limits are, sometimes at the extremes, and pass on our experience to the growers. This was also the case with our experimental project, now complete, which aimed to determine the optimal spring cutting date for the Tettnanger variety . We discovered that cutting too early reduces the yield. We therefore advise the growers to be a bit more patient in the spring – depending, of course, on the seasonal weather and specific conditions in the respective hop gardens.

Other topics that we research include irrigation – on an area of 0.3 acres, we have installed drip irrigation, which will subsequently be upgraded to provide "fertigation", i.e. the targeted delivery of plant nutrients. We are currently switching our planting methods over to the more flexible wide-area system.

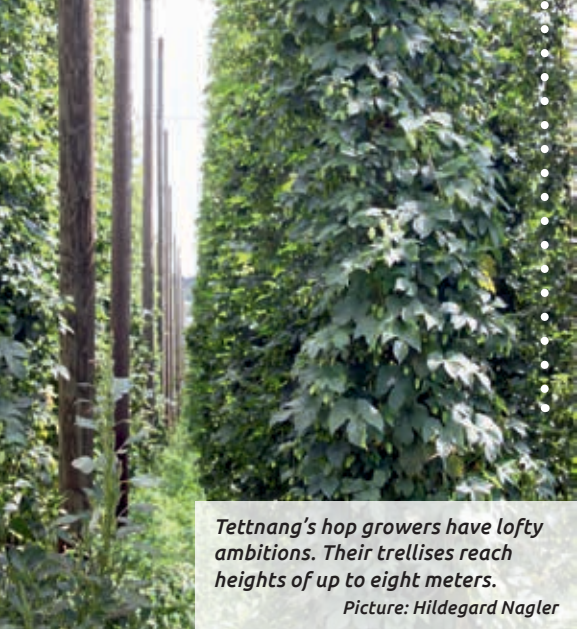
Tettnang uses the highest trellis systems in the world, which must withstand the hot, dry winds and thunderstorms on Lake Constance, even when fully loaded with harvest-ripe hops. When it comes to finding suitable variants of the trellis systems used in the hop gardens, we test various bar materials, such as wood with and without protective film in the earth-air zone, as well as concrete and steel pipes with frame heights of up to seven or eight meters. Over several years, a low-trellis system with a height of three meters was also tested in the Tettnang region as part of a federal research project. For the conventional, marketable hops varieties, this resulted in a decrease in both the yield volume and the product quality.

As an alternative to the conventional iron wire used for staking, versions involving paper, cotton, plastic and coconut cords were all tested in the past. Currently, a mini-trial is underway with a variant that contains biodegradable material produced by a specialist manufacturer.

Of course, we also cultivate hops in accordance with the relevant organic guidelines – on an area of 0.4 hectares we use no chemical synthetic pesticides at all, and instead control diseases and pests using only copper, various minerals, fatty acids, natural pyrethrum, quassia, neem, whey and benzoic acid. Of the approximately 1100 hop farms in Germany, eight are currently operating without the use of chemical-synthetic pesticides and nitrogen fertilizers, of which one is located in the Tettnang region.



Passionate about their work (from left): Gabriel Bader, Bruno Bohner and Franz Wöllhaf.
Picture: Hildegard Nagler



Tettnang's hop growers have lofty ambitions. Their trellises reach heights of up to eight meters.
Picture: Hildegard Nagler

We are happy to be the contact point for individual hops-related questions, and we also provide information for the growers via regular events. In a special committee consisting of a panel of five growers, we regularly discuss important issues with the support of the Hop Growers' Association (HPV). Our ambition is to think ahead, to ensure our tests stay one step ahead of the industry so we can help the hop growers to overcome future challenges.

The Strass trial field for hops thrives thanks to the passion of the people behind it: Experimental technician Bruno Bohner (who has been working there for 31 years – his father previously held the same position), experimental technician Gabriel Bader and supervisor Franz Wöllhaf. The trio are employed as permanent staff by the district administration for the Lake Constance region, thus ensuring ongoing support for the trial field. ■

Marker-assisted selection has become an important topic

The University of Hohenheim praises its close links to the hop growers

■ **By Prof. Gerd Weber and Dr. Michael Hagemann** ■

Around 150 plant supports on a 60 x 16 x 6-meter plot – a description of the hop garden at the University of Hohenheim in Stuttgart. The site was established in 2004 by the Tettnang hop growers for the working group led by Prof. Gerd Weber. Its purpose was to make hop research possible at the university, without requiring long journeys to Tettnang.

We began conducting hop research at the University of Hohenheim around 20 years ago. The goal of the first project was to select clones of the Tettnanger regional cultivar which demonstrated increased resistance to a fungal disease (downy mildew). To do this, we investigated the genetic variability of the Tettnanger cultivar, i.e. whether the phenotypic differences between individual clones of the Tettnang aroma hop gene are due to differences in the genotype, and whether it is possible to identify fungus-resistant clones.

The results showed that it was only possible to identify a few differences with the resources available at the time, as this particular regional cultivar is largely genetically homogeneous. Further research projects followed in close coordination with the growers in Tettnang, who provided generous support. A focus of this research was to develop "medicinal hops" for use in the medical field – hops are a unique source of a number of pharmacologically active chemical compounds. The research focused on the biosynthesis of these ingredients and the regulation of their production within the hop plant. To this end, sterile tissue cultures were created for the Tettnanger variety, and molecular biological and biotechnological methods were specifically developed for the purpose of research into hops. With the help of these "tools", the activities of the genes responsible for the production of herbal ingredients during the development of female flowers were analyzed. A first step towards deciphering the hop genome was carried out in collaboration with our colleagues in the USA. The nucleotide sequence of the active genes (transcriptome sequence) was ultimately determined thanks to a substantial financial contribution from the German hop growers.

In 2013, Johann Heimpel, the former chairman of the Hop Growers' Association in Tettnang, came to us with a request that continues to keep us busy to this day. He asked us to investigate the characteristics of the male hop plants. His reason for doing so was the fact that the commercial value of the hops used in the brewing industry is based on the ingredients of the flowers of the female plants. Very little is known about the male plants that are necessary for breeding, and consequently

Researchers Gerd Weber (left) and Michael Hagemann. ***Picture: Roland Weiß***



growers can only rely on their experience from earlier cultivation attempts when selecting a male cross-breeding partner. By decoding the genome of the male plant, it would therefore be possible to shorten the breeding process. With the help of so-called "molecular markers", positive or negative characteristics of crossbred progeny can be identified at an early stage of growth, enabling growers to select plants with desirable traits at an earlier point in the process.

However, when Prof. Weber retired and his specialist field at the university was no longer occupied, hop research in Hohenheim found itself in jeopardy. Fortunately, Prof. Wünsche, who was investigating the "Yield physiology of special crops", was willing to continue the research into the special crop, hops. "Marker-assisted selection for hops" was the name of the overall project initiated by Prof. Weber and Prof. Wünsche. The first phase – "Optimizing hop breeding via genome and metabolite analysis" – was completed in 2017 and the second phase – "Genome-based marker-assisted selection for future-oriented quality hops" – will run until 2020.

Since 2014, Dr. Michael Hagemann has also been working on hops and has set up a research group within Prof. Wünsche's specialist field. Currently, its primary goal is to develop molecular markers for the purpose of breeding varieties with higher bitter acid contents. As part of this work, we collaborate with important commercial and institutional partners in German hop and plant research: the Hop Research Center Hüll overseen by the Bavarian State Research Center for Agriculture, the Society for Hop Research e.V., the Max Planck Institute for Developmental Biology in Tübingen, the Hop Traders' Cooperative e.G. as well as the Tettnang Hop Grower's Association. Current research shows that the growth disturbances affecting Tettnang hops that were observed in the 2017 season were not, as was initially assumed, caused by dangerous viruses or viroids. They were most likely caused by increased exposure to bugs and the very hot weather. Future research topics will include the avoidance of androgyny, ways to control flowering and the effects of climate change on hop quality.

The biologist Prof. Gerd Weber retired at the end of the summer semester 2013, but remains a partner in the Hohenheim hop research. Dr. Michael Hagemann, also a biologist, coordinates hop research at the University of Hohenheim in the field occupied by Prof. Jens Wünsche, "Yield physiology of special crops". Thanks to the innovative and future-oriented partnership between the researchers in Hohenheim and the Tettnang hop growers, the future of hop cultivation in the Lake Constance region is being sustainably and competitively secured. "We understand the importance of this partnership," says CEO Jürgen Weishaupt. ■

"Hüll": Hop research has a name

The renowned research institute is also investigating cross-breeding with the Tettnanger cultivar

■ **By Dr. Elisabeth Seigner and Anton Lutz** ■

The fact that hops and hop varieties require careful development as well as research and breeding that goes beyond mere selection, is by no means a recent discovery. For more than 90 years, a particular term has been associated with these topics in Germany – the Hop Research Center Hüll.

Located near Wolnzach in the heart of the Hallertau, research began there in 1926, following several catastrophic harvests due to an outbreak of peronospora. A group of brewers purchased a research farm and founded the "Gesellschaft für Hopfenforschung" (Society for Hop Research) as a responsible body that increasingly attracted the hop traders and growers as members.

The hops research institute was added to the research farm in 1962, the same year in which the first new varieties from Hüll received variety protection – this truly highlights the enormous amount of time required to complete the breeding cycles. For example, research was carried out between 1966 and 1978 in Hüll on the "Perle" variety, however it then took another decade for the new peronospora-resistant and mildew-tolerant variety to become a "hit" in the market. Other hop types followed in the 1990s, and in 2006 the "Hercules" hop became established, which is currently the most popular high-yield, high-alpha variety.



Two hop experts working together: Elisabeth Seigner and Anton Lutz at the hop garden in Hüll. *Picture: Hildegard Nagler*

Hops and the state of the art

Hops as a synonym for Tettnang – immortalized via cutting-edge computer technology. Linux certainly chose an interesting name for the second version of its free Fedora operating system: "Tettnang". In other words: Due to a reference to hops, the majority of the community's members found the name Tettnang appropriate for the second version of the software, which has since been developed into more than 20 separate versions. Fedora Core is open-source software that is being developed in stages. The name of each version is related to its predecessor. Version 1 was called "Yarrow", and since yarrow (rather than hops) was used to brew beer in earlier times, the next version received a beer-related name: "Tettnang". Version 3 was then named "Heidelberg" – reportedly because, like Tettnang, it is both the name of a city and a beer brand.

Today, around 85 percent of the German hop growing areas contain varieties developed in Hüll. The success of the Hüll breeding program – and of hops research in general – can be traced back in large part to 1975, when a partnership between the society for hop research and the state of Bavaria was initiated via the Bavarian State Research Center for Agriculture.

Since 2010, this research expertise has also been applied to improving cultivation of the Tettnang Tettnanger regional cultivar. The primary goals of this project are to significantly increase the plants' yield potential and fungal resistance (while also improving climate adaptation and nutrient efficiency) – to the maximum extent possible while still preserving the classic Tettnang flavor.

A lofty goal for which more than 30 cross-breeding pollinations have been carried out to date. This process involved examining around 5000 seedlings in the greenhouse. Approximately 1100 pre-selected female seedlings were then planted in the Hüll breeding garden as single plants; however only 68 came close to reaching the breeding goals. These plants were then harvested and chemically analyzed.

The next turning point on this long selection path was an examination of the resulting strains in 2017. Eleven female strains with good agronomic performance, strong pest resistance and appealing ingredients are currently being tested at three locations – in Hüll, Stadelhof (a hamlet near Wolnzach) and Tettnang-Strass. The HPV Tettnang is also on board as a partner and also provides funding.

The next step will be the crucial multi-year farm-scale field trials that are planned for the most promising candidates from 2019 onwards. Brewing trials will also be carried out in parallel.

In just a few years time, these breeding projects might benefit from new selection procedures based on the presence or absence of certain genetic material segments (in the genotype). In partnership with the University of Stuttgart-Hohenheim, data regarding the plants' characteristics, ingredients and genetic make-up is being recorded and precisely documented in the form of a hop reference collection that contains over 1000 varieties and breeding strains. Biostatistical computation of this data will make it possible to identify genetic sections (molecular markers) which give rise to valuable breeding characteristics. An analysis of the genome will then tell us whether a variety of hops from the Tettnang breeding program is disease-resistant or not.

However, over the next few years, our Tettnanger descendants will continue to be tested in the greenhouse and field and evaluated without genomic selection. If the results are favorable, the Society for Hop Research will make a decision in close consultation with Tettnang's hop growers with regard to registering one of the strains as a new variety.

Biologist Dr. Elisabeth Seigner has worked at the Hop Research Center Hüll since 1989, where she leads the breeding research group. Anton "Toni" Lutz, a graduate in farming, is her deputy. The two are considered the "dream team" of hop breeding.

Links to the research farm in Strass have existed since 2010 – a connection and an exchange of knowledge whose value is well-known to the Tettnang hop growers: "They help us a lot," says CEO Jürgen Weishaupt. ■

Finding true love among the hops

"Heiße Ernte" ("Hot Harvest"), the feature film by Hans Heinz König from 1956, has shaped the public's image of the hop harvest in Tettnang for decades. The film's plot centers around a farmer's son, Konrad Stammer, who is due to marry Sybille, the daughter of a wealthy famer called Scharfenberg, a friend of Konrad's father. Auschra, a refugee girl, works on the Stammers' farm. When she is injured, Konrad looks after her with tenderness and they soon fall in love, which gives rise to some complications ...



In addition to 150 actors and crew from Munich-Geiselgasteig, extras from in and around Tettnang were hired for the movie. The film was shot in the Hotel Bären in Tettnang and the town's gymnasium, while the outdoor scenes were filmed on the Moos estate and near Siggenweiler and Dieglishofen. The filmmakers took some creative liberties, for example by ignoring the fact that Tettnang is about eight kilometers from Lake Constance – in one scene, one of the actors jumps (presumably over five miles of hop gardens) from Tettnang straight into Lake Constance!

The film's lead actor and producer visited Tettnang in November for an evening performance of the film. "Heiße Ernte" premiered on November 23, 1956 at the Theater am Frauentor in Ravensburg. The film's release title was "Der Gutsherr und das Mädchen" ("The Squire and the Girl").



The striking interplay of green, white and blue. *Picture: tt-bilder.de*



1: In March/April, the hops are cut back to about ten centimeters below the surface of the soil with a special cutting device. This promotes the rejuvenation and health of the hops plant.



2. Climbing wires are also attached to the trellis system by hand in March/April.

A journey through the year with a hops farmer



3. Attachment of the climbing wires, as seen from below: By means of a "hops pulpit", two or three helpers are moved upwards in a basket.



4. The wires suspended from the trellis are anchored into the ground with a "Stupfeisen" (a metal bar with a footstep).

Pictures: PR



5. In April/May the hop plants are trained. Depending on the variety, three to four shoots are selected and wound around the wire in a clockwise direction.
Care must be taken to ensure the tip of the shoot does not break off.



6. The hops are harvested from late August to the end of September. During this process, the bines are gathered up with the picking device and hooked onto the machine by hand.



7. Once the machine has gently picked the leaves and cones from the main shoots, it separates the cones from the stems and leaves. The result is so-called "green hops", which are gently dried after picking in the hot air dryer to reduce their water content from around 80 percent to a residual amount of ten percent.



8. At the end of the process, the hops should have a water content of around ten percent. In this state they are preserved, their aroma is retained and they can be carefully packed into bales. *Pictures: PR*

The journey from Tettnanger hops to beer (the proof of the pudding...)

Master brewer Eric Toft answers some frequently asked questions

How important are the quality and origin of the hops used as raw ingredients in the brewing process?

Every reputable brewer should – and indeed must – attach the greatest importance to the quality and origin of the hops. You can certainly brew bad beer using high quality raw ingredients; however, it is impossible to brew high quality beer using inferior ingredients.

How important is the growing area, the terroir, the vintage and the selection/ sampling of the corresponding hop lots for the resulting beer?

The growing area, the terroir and the vintage all have a significant influence on the character of the beer. Furthermore, the soil conditions, weather, orientation to the sun, microclimate and adjacent crops all influence the quality of the hops and shape their character. In addition, the farmers play a major role in determining the quality and character of the hops. For example, they determine when to cut the plants and use fertilizer, if and when pesticides should be used, and they also set the harvest date. And because all hop varieties are different, sampling and selection are essential. Fortunately, the decision for or against a particular lot is based on personal preferences, which means each brewer can find the right hops for their product. Were this not the case, the number of different beers would decrease and the "beer landscape" would become rather monotonous and bland.

Do the brewers need to be present during the harvest?

I visit our farmers just before, during and after the harvest. I select my locations or lots before the harvest, and I agree the harvest time with the farmers. When sampling and selecting after harvest, I usually stick with the locations I had decided on before or during the harvest. Typically, I select the same locations (sometimes blindly) each year, which underlines the importance of the location and the terroir for the hops' character. Only during "exceptional harvests" (for example, following periods of extreme dryness, humidity or cold) I might, as an exception, choose other locations, because different types of hops can handle extreme situations better in certain soils. For most of our beers, I use several types of hops and blend up to three vintages of each variety to compensate for the variations in each vintage. As a result, I might use twelve hop lots – i.e. three vintages of four varieties – for one beer.



Freshly picked hop cones.

Picture: Barth-Haas Group

When are aroma, bitter or flavor hops/ varieties used?

Traditionally, the bitter hop varieties are used for the first hopping, and the aroma varieties for later hopping. This is largely due to economic considerations – the cheaper bitter varieties provide the basic degree of bitterness, while the "expensive" aroma varieties provide the finishing touch in terms of the aroma and aftertaste. In principle, however, you can add any variety at any time. Flavor hops are used both for the first and for later hopping, often in a cold zone, i.e. for "cold hopping" (also called dry hopping) in the fermentation and/or storage cellar. We only use aroma and flavor hop varieties. Having repeatedly experimented with bitter varieties, I've always found that they don't fit the profile of our beers. As a result, two decades ago we selected the "Tradition" variety as our "bitter hops".



Eric Toft during the grading process for malt – in this case wheat malt.

Picture: Schönram brewery

What are the criteria for the various product types (cones, pellets, extract)?

The choice of product type depends on the vintage as well as the technology and equipment that is available in the brewery.

For example, some large-scale facilities only allow the use of extract, while smaller craft businesses have been set up to use cone hops since time immemorial. While Type 90 pellets closely resemble the qualities of cone hops, hop powder, i.e. the precursor of pellets, comes even closer. Hop extract is frequently used in large breweries with a high degree of automation, since it can be pumped (when heated). Processing the hops into extract makes it possible to store and keep very high quantities of hop ingredients, enabling brewers who opt for this purchasing policy to "disconnect" themselves from significant price fluctuations in the spot market. The use of hop extract can also be beneficial for extremely heavily hopped specialty beers, such as IPAs.



Which product type do you prefer to use?

In years with lower alpha values, I prefer standardized pellets (with a defined percentage of alpha acid, which is generally 60 to 80 percent of the original weight of the cones) – but not overly concentrated, as too much of the plant gets lost. I would absolutely love to take cones all the time, however I don't have the right equipment (hop colanders). I like to use Type 90 pellets, and occasionally also hop powder from smaller lots, which is difficult to process into pellets due to the high loss rate. For our "Grünhopfen Pils" we use non-dried, i.e. green cones. For this beer, I'm in the brewhouse for 36 hours straight making three brews. I use the lauter tun as a hop colander – as this is purely manual work I have to spend 50% longer in the brewhouse.

In Tettnang, the so-called regional varieties (Tettnanger, Hallertauer mfr.) are grown on around 60 percent of the available acreage. These are varieties that are not crossed and belong to the group of high-grade aroma hops.

a. How do you rate this group of high-grade aroma varieties, and for which beers/beer styles are they best suited?

Personally, the group of high-grade aroma varieties is my favorite group. These varieties are unbeatable in terms of harmony, balance and sophistication. In principle, they can be used for any style of beer, but they really come into their own in classic German as well as central and northern European beers.

Hop pellets ***Picture: Baywa AG***

b. Which combinations are possible with these high-grade aroma varieties?

These varieties can be combined with all the classic varieties and breeds that share much of their genetic material with the regional cultivars. However, each brewer needs to experiment with various combinations at their own facility, as synergies allow one variety to "switch off" the typical properties of other varieties, and even to accentuate their negative characteristics. Equally, their positive qualities can also be reinforced. Based on the same principle, the regional cultivars can be combined with any of the flavor hops and/or foreign varieties. Ultimately, the proof of the pudding is in the eating.

c. At which stage in the brewing process do you use Tettnanger and the like? Do you also use them for dry hopping?

Tettnanger & Co. can be used at any time in the brewhouse. For example, during wort boiling – either at the beginning, in the middle, or at the end of this process – and also for the mash, or they can be added in the whirlpool or the hop colander, and of course also during dry hopping in the cold zone. Traditionally, the varieties in this group are used at the end of the brewing process, however their potential is diverse and many-faceted, and is by no means limited to late hopping in the hot phase.



The master brewer during the hop grading process. ***Picture: Schönram brewery***

Why are the end consumers of beer not informed about the hop varieties, the terroir or, for example, the flavor components within the end product in the same way that wine drinkers are informed about the grapes?

There are already a number of breweries that highlight the hops they use via their labels, websites or beer menus. Generally, however, we brewers are unfortunately still in the Stone Age in this regard. ■



Hop cones in all their glory.
Picture: tt-bilder.de

"The taste of Tettnang"

A very special beer has been created for the town's anniversary

More than 20 different hop varieties are cultivated in Tettnang. In addition to Tettnang Tettnanger, the region's flagship hop par excellence, these also include classic aroma varieties such as Tradition and Perle, as well as new flavor hops like Mandarina, Callista and Melon. And the Herkules variety also covers the high-alpha segment in our region.

To mark the 175th anniversary of hop growing in our region, the Hopfengut No20 brewery has created a special festive beer with the aim of demonstrating the diversity of Tettnanger hops.

The goal for the hopping was to transfer a traditional and complex hop flavor to the beer, while ensuring it is also characterized by a bitter, hoppy aftertaste.

Five minutes before the end of boiling and also in the whirlpool, the hop varieties Tradition, Tettnanger, Mittelfrüh and Saphir were added to create the aroma, while Tettnanger, Melon and Mandarina were added in the cold zone.

To do justice to the motto "The taste of Tettnang", the hop varieties and quantities used in the beer were based on the actual proportions of the hops grown in Tettnang. ■

Technical specifications:

Bottom-fermented
Original wort: 12.9 percent
Alcohol content: 5.2 – 5.5 percent
Bitterness units: approx. 40
EBC: approx. 7.5

For the hopping:
1st hopping at start of boiling: Herkules and Perle
2nd hopping in middle of boiling: Tradition and Tettnanger
3rd hopping five minutes before end of boiling: Mittelfrüh and Tettnanger
4th hopping in whirlpool: Saphir Mittelfrüh and Tettnanger
5th hopping in cold zone: Tettnanger, Melon and Mandarina



"Aromas in wonderful harmony"

Beer sommelier Stephan Hilbrandt savors the Tettnang anniversary brew

"In the glass, the beer has a strong golden color and a strong, stable and bright head. Herbs, lemon balm and spicy notes dominate the aroma – accompanied by a light fruity note that is reminiscent of berries.

The initial taste is rather "thin", however the full blend of the Tettnanger hop varieties then unfolds during the main drink. While the first sip is dominated by fresh, citrus-like notes accompanied by a touch of strawberry, the next sip is full of herbal and spicy hop aromas. Take another sip, and the beer presents itself with a spicy, almost nutty taste. After these first impressions, if you then leave the beer some time to "work" during the next sip, all the aroma characteristics described above become apparent in wonderful harmony. Herbal spiciness initially sets the tone, then is briefly replaced by the fruit flavors to make room for the spicy-nutty components in the transition to the aftertaste. This light, elegant-looking beer leaves a pleasantly dry, tart and cozy aftertaste that lingers for a pleasantly long time with a hint of spicy hop aromas."

Stephan Hilbrandt from Bonn was crowned "World Champion of the Sommeliers for Beer" in 2017. Having prevailed against 69 participants from 15 nations, he earned the right to use this title for two years. "People should think of beer more as a luxury beverage and dare to try different flavors," says the 33-year-old hobby brewer. ■

Stephan Hilbrandt was crowned "World Champion of the Sommeliers for Beer" in September 2017, a title he is permitted to use for two years.
Picture: PR

Six breweries in Tettnang – the good old days

Still familiar names to this day: "Krone", "Schöre" and "Hopfengut No20" – when beer drinking in public became fashionable

Large-scale hop cultivation began on fertile ground in Germany 175 years ago. This was due to a rise in the popularity of beer drinking throughout the country. Previously, individual brewers had grown hops solely for their own use.

At the time of these developments, Tettnang already had a profitable wine growing industry. However, the link to hops had already been established by the local soil conditions and climate – wherever wine grapes grow, hops should also thrive.

And yet Tettnang's farmers remained unconvinced about switching to hops for a long time – for example, in a local competition held in 1848, the prizes given for improvements in viticulture and meadow construction were still significantly higher in value than those awarded "for the promotion of hop production". It was not until the 1870s that hops growing finally overtook viticulture in Tettnang (1874: 400 versus 320 hectares).



Throughout Tettnang, the town's attachment to the hops trade is evident in many places.
Picture: Roland Weiß

This "lane change" was made smoother by the popularity of public beer drinking, especially in public houses – an activity described in a local council protocol of 1826 as a "habituation".

In 1838, the local district office recorded 14 breweries within the district that then covered the eastern area of Lake Constance. Three were located in Tettnang, three in Friedrichshafen, and the rest were spread among the larger communities.

By 1841, the number of breweries in Tettnang had already risen to six. According to the Council's minutes, these were the "Krone", "Bären", "Lamm" (now the "Metzgerei Forster mit Imbiss"), "Grüner Baum" on the Schlossstrasse, "Froher Aussicht" and the Royal Württemberg "Domäne Schäferhof". There are records of these establishments until 1904, which means that, for some time thereafter, the Schäferhof might well have been the only other brewery in Tettnang besides the "Krone".



The hop industry is reaching new heights – just like the visitors on the viewing platform at Hopfengut No20 in Siggenweiler.
Picture: Hopfengut No20

They all had – in some cases buried inside the "mountain" – their own beer cellars, some of which some still retain their original names today. Examples of such cellars can be found on Lindauer Strasse and in Neuhalden.

On the following pages, the three breweries that are currently located in the district of Tettnang are presented – the aforementioned "Krone", the "Schöre" in Dietmannsweiler and the "Hopfengut No20". ■

Brewing with heart and soul for seven generations

Fritz Tauscher from the "Krone" brewery swears by Tettnang Tettnanger, which he considers the world's best hops

Founded just three years after large-scale hop cultivation began in Tettnang, the "Krone" will have plenty to celebrate in 2022. Since 1847, the inn has been owned by seven generations of the Tauscher family, of which Fritz Tauscher is the latest member to take the helm. The 38-year-old has been able to build on the expertise of his forebears – including manual brewing methods such as direct firing and storage of the beer in the deep cellar at zero degrees Celsius.

Today, the "Krone" houses a restaurant, guest house and brewery. In his own words, Fritz Tauscher has been "playing his own tune" in the latter since 2007. After an apprenticeship that covered all facets of brewing, he studied in Weihenstephan. His diploma thesis was dedicated to "Hop extraction experiments in wort boiling" – and resulted in the rather sobering discovery that the proportion of bitter substances cannot be significantly increased by changing the brewing parameters.

He apparently owes his professorship to an exciting stay in Brazil, which was supposed to last four weeks but stretched to four months. At the turn of the year in 2006/07, Fritz Tauscher assisted Herbert Schumacher with the optimization of his brewery, Cervejaria Abadessa, in Porto Alegre. After much persuasion, Schumacher agreed to use aroma hops from Tettnang, which proved to be a decisive step forwards. By the time Tauscher had finished setting up his first brew, the owner was already convinced – Tettnanger hops were an absolute must.

These days, Fritz Tauscher personally advocates for his favorite hops: "I'm a fan of Tettnang Tettnanger," says the graduate master brewer. He has been surrounded by beer and its production all of his life – he still remembers the days of two-shift operation in the brewhouse, and when the children would turn up, hoping to be given under-filled soda bottles to keep.

Or when he accompanied his grandfather to select the hops lots and negotiate the prices with the farmers at harvest time – conversations that were wholly inappropriate for the youngster's ears.

Always the first choice: Tettnang Tettnanger. "For me, they are simply the world's best hops" – Tauscher bases this claim on the mix of aromas and variety of beers that can be brewed with Tettnang Tettnanger. Of course, the brewer must know how to treat these fine aroma hops to ensure they can work their magic – both in the brewery's sparkling pilsner (with late hopping) as well as its hearty "Doppelbock". Tauscher briefly lifts the cloak of secrecy that every brewer wears in their own way: "Time is the fifth ingredient in beer."

He remains faithful to the tradition of organic beers that the "Krone" has followed since 1992 (with its cellar pilsner). Three of the four main products he uses are produced in organic quality. Fritz Tauscher broke new ground in 2011 (leaving aside his "wedding beer" from 2010) with his "Jubilee Fusionator" beer to mark the ten-year anniversary of the merger of the hop processing cooperative. He did so again in 2012 with his "Hopfenkrone" beer, which included some Saphir hops alongside Tettnang Tettnanger.

From year-round beers to seasonal brews (such as "Narrenkrönle" or the two "Coronators"), the brewery's customers can rely on the fact that around 5,000 hectoliters of beer are brewed annually using traditional methods – including hopping with whole cones – and with a strong emphasis on tradition. This also includes a somewhat richer hopping process, because "You must be able to taste the fact that we are from Tettnang." ■



Fritz Tauscher has been the master brewer at the "Krone" since 2007.
Picture: PR

Fritz Tauscher

Fritz Tauscher was born 1980 and is married with two children (Fritz and Frida). He trained as a brewer and maltster until 2003, including at the Klosterbrauerei Weltenburg, and also with his uncle Roman Tauscher in his own house. In 2008, he graduated as the top master brewer in his class. The Hopfengut brewery, which he co-founded in 2015 with Charlotte Müller and Lukas Locher, represents a notable side project for Fritz Tauscher. His primary focus there is on brewing specialty beers.

"For me, Tettnanger hops are synonymous with home and quality"

Master brewer Robert Bentele, from the Schöre brewery, is proud to be able grow and process this noble crop

His family has cultivated the finest Tettnanger aroma hops for five generations. "As a hop grower myself, I'm always happy to show my fellow brewers where their hops come from and how they're grown," says Robert Bentele from Tettnang-Dietmannsweiler. "My personal relationships with the beer brewers are very important to me."

"If you've grown up around hops in the Tettnang region, you can't break their spell," says Robert Bentele with conviction. Far from sounding regretful, his voice resonates with his great joy and pride that he is "lucky enough to live and work in this beautiful scenic area". Robert Bentele is a master brewer and farmer – his principal activities are beer production, sustainable conventional hops farming and cattle fattening. "We are a traditional family business that values quality and sustainability. Our products are marketed directly to the end consumer via a short and direct route."

At the "Schöre-Hausbrauerei" with its twelve-hectoliter brewhouse, beer is produced exclusively using aroma hops from the family's own field – in other words, with Tettnang Tettnanger ("a very fine aroma hop whose aroma develops very well in the beer") as well as the Hallertauer Mittelfrüher variety. The hops are combined with water from the brewery's own spring and malting barley sourced from the region. "Good things take time – which we give our beers to let them fully mature," emphasizes Robert Bentele. In addition to the very drinkable "Schörebräu hell", the brewery also produces the malty "Schörebräu dunkel", the hoppy "Schöre-Pilsner" and the top-fermented "Schöre-Weisse" beers. Depending on the season, specialty brews such as the "Erntepils", the "Schreer-Bock" for Lent and the "Bulldog" beer also make an appearance. Visitors to the brewery are welcome to participate in the creation of these beers.

"For me, Tettnanger hops are synonymous with home and quality, they are a way of life. It makes me proud to be able to cultivate them with passion and watch them grow," says Robert Bentele. "To then be able to use them in the brewery and enjoy a beer made from our Tettnanger aroma hops is an absolute privilege that I fully appreciate, it's just the best."

PS: Fittingly, in 2011 the court chapel, which Robert's father, Georg Bentele, spent many years planning together with architect Helmut Sauter and artist Adam Dziuba, was consecrated to Saint George, the patron saint of farmers, livestock and the weather. His Saint's day is April 23, which also happens to be the "Day of German beer". ■

Robert Bentele

From 2001 to 2004 he trained as a brewer and maltster at the Schäffler brewery in Missen. In 2005, Robert Bentele worked as a brewer for six months at the Schwendel brewery in Tacherting, followed by another six months at the Postbrauerei Nesselwang in the Allgäu region. In 2006, he completed a one-year course at the master brewers' school in Doemens, Gräfelfing, and in 2007 he graduated in craft-related business management in Ulm. He also successfully completed studies at the Agricultural Winter School in Ravensburg from 2007 to 2009.

"As a hop grower myself, I'm always happy to show my fellow brewers where their hops come from and how they're grown," says Robert Bentele. ***Picture: tt-bilder.de***



“We want to show what our hops can do”

At Hopfengut No20, Lukas Locher and his sister Charlotte Müller are adding something new to the old traditions

For them, everything comes down to the hops – Lukas Locher and his sister Charlotte Müller share a passion for the “green gold” that virtually began in the cradle.

Bernhard Locher, father of Luke and Charlotte, has become something of a “gray eminence” where hops are concerned. Like his father before him, Bernhard Locher was both a grower and chairman of the Hop Growers’ Association.

And now his children are continuing the tradition – to which they have also added something new in Siggenweiler. At Hopfengut No20 they produce fine aroma hops for breweries worldwide. In addition, they brew their own beers “from a small handpicked quantity of our hops. A unique feature of our brewery is that our team comes from one traditional hop-growing and brewing family,” explains Lukas Locher. In other words, he manages the brewery at Hopfengut No20 together with his sister Charlotte Müller and the Tettnang-based master brewer Fritz Tauscher (see p. 47).

“We want to show what our hops can do,” emphasizes Lukas Locher. “The beers that we brew at the Hopfengut are different from the classic beers in this region due to their highly distinctive hop aromas. Our goal is to increase people’s appreciation for and awareness of the hops used in the beer.” As a result, only hops from their own fields, i.e. from Tettnang, are used in their brewing process.

“I’m convinced that all the hop varieties grown in Tettnang are top quality. This applies to the new flavor varieties, the traditional aroma varieties and, of course, to our figurehead, the Tettnang Tettnanger hops,” says Lukas Locher. “We love the diversity of our varieties and enjoy trying something new.” Nevertheless: “The classic Tettnanger variety plays an important role in our recipes and is used in virtually all our beers.” This applies, he says, to the brewery’s classic lager beer as well as its “heartily hopped IPA”.

“As Tettnang hop growers, we are strongly supportive of our growing area and our main variety, Tettnang Tettnanger,” summarizes Lukas Locher. “All growers strive for optimal quality. In combination with the ideal climatic conditions created by our soils and Lake Constance, this results in an excellent product. The brewers appreciate this, and you can really taste it in the beers brewed with Tettnanger hops.” ■



Fully committed to their work: Siblings Charlotte Müller and Lukas Locher have felt a bond with the local hops since their childhood.
Picture: PR

Lukas Locher

Lukas Locher was born in 1986 in Tettnang and began his studies of the agricultural sciences in Hohenheim in 2008. Since 2012, he has been involved in the management of his parents’ company. In 2014, Lukas Locher completed his training as a beer sommelier.

Charlotte Müller

Born in 1982 in Tettnang, Charlotte Müller joined the family business full-time in 2009 after completing her economics studies at the technical university in Nürtingen. “Enthusing people about hops as a raw material has always been part of my everyday life,” she says.

Together with Fritz Tauscher, the siblings founded a specialty brewery at the Hopfengut in 2015. One year later, Charlotte Müller and Lukas Locher took over their parents’ farm, Hopfengut No20, including the hop-growing area, museum, shop and restaurant.

“You can’t brew beer without love”

All brewers are not the same, and hops from Tettnang are not just any old hops

“Brewing good beer is not just a matter of gathering the right ingredients. It also needs a bit of magic and certain elements that nobody really understands.” And Fritz Maytag should know – this experienced American master brewer is also the former owner of the Anchor Brewing Company in San Francisco, which is famous for its “Steam beer”.

To put it simply: Brewers all over the world use hops from Tettnang to give their beer a unique flavor – in the United States, Sweden, Italy, Austria, Switzerland and, of course, in Germany.



Fantastic view of Lake Constance and the Alps: This sight is also enjoyed by the brewers, many of whom come to the Tettnang growing area every year.
Picture: Stefan Trautmann

On the following pages, we introduce some interesting people who love hops from Tettnang for a variety of different reasons. Their stories are linked by a common theme that is repeatedly emphasized: Hops from Tettnang are not just any old hops. They are so much more. This is a fact that can be seen, smelled and tasted – in other words, Tettnanger hops create an experience.

As you read their stories, another fact becomes clear – that all brewers are not the same. And this is not only suggested by the numbers – there are around 19,000 breweries worldwide, more than 90 percent of which are craft breweries.

Germany alone is home to over 1500 breweries, which are predominantly located in southern Germany (642 in Bavaria, 204 in Baden-Württemberg).

All brewers are not the same – which also means that healthy competition is an essential ingredient in the brewing industry alongside hard work – for the benefit of beer drinkers, who get to choose between the different fruits of the brewers’ ingenuity.

Ultimately, beer lovers can still rely on what the Russian writer Leo Tolstoy (1828-1910) knew long ago: “You can chop wood, forge iron and make bricks without love, but you cannot brew beer without it.” ■

A personal connection to the growing area

Ron Barchet, founder and master brewer at the Victory Brewing Company, raves about the passion of the hop growers

"Tettnang – it's up there with most beautiful hop-growing regions in the world. The idyllic landscape of Lake Constance and the Alps that frame the hop gardens is simply breathtaking. "Ron Barchet, founder and master brewer at the Victory Brewing Company, is in raptures when he thinks of Tettnang, its hops and the people who cultivate them. "Their hard-working culture guarantees the quality, cleanliness and effectiveness of the products that are made there, especially the hops. For me, the mix of hops, fruit, industry and landscape there is unique among all the hop-growing regions."

Ron Barchet visited Tettnang in 1987 and 1991 and has used Tettnanger hops since the Victory Brewing Company first opened its doors in 1996. "As a master brewer, I think Tettnanger hops are the finest for traditional lager beer. Because I got to know the area, the people and the planters, I feel a personal connection to the Tettnang growing area. I believe that all these relationships are mutually beneficial."

Tettnanger hops, says Ron Barchet, are "very special, and we critically evaluate the taste, aroma and aftertaste of pilsner beers". They are, he says, the dominant hops in the brewery's popular "Prima Pils", and are used as a staple hop in the brewery's two best-selling beers, the "Golden Monkey" and the "Sour Monkey". "Although the Monkeys are not particularly hoppy, their soft and gentle bitterness is the result of using Tettnang Tettnanger and other noble hops," says Ron Barchet. "Tettnanger is our beloved main hop variety from Tettnang." In addition, the brewery also experiments with new hop varieties such as Mandarina, Blanc and Melon for seasonal or unique beers.

Ron Barchet then tells us an anecdote: "In 1984, having just turned 21, I worked for one summer in Laufenburg. It was there I discovered how great a beer can taste. There was one beer I preferred to all the others. It was called Waldhaus-Pils and had the most interesting flavor. Many years later, I realized that this was due to the Tettnanger hops. I remembered this beer and returned there in 1991 as a student at the Weihenstephan brewery. It tasted just as good as I remembered. This time I knew better – I asked for a bottle and discovered that only Tettnanger hops were listed on the label. I knew then and there that if I ever wanted to brew a great pilsner, it would have to contain Tettnanger hops. And that's exactly what happened." ■



Ron Barchet uses whole hop cones and German malt in the beers produced by the Victory Brewing Company. *Picture: PR*

Ron Barchet ...

... began home brewing when his future partner, Bill Covaleski, gave him a beer brewing set for Christmas in 1985. ... was an apprentice brewer at the Baltimore Brewing Company, a German-style brewery that opened in 1989. Ron Barchet was the first employee at Theo DeGroen's brewery. From 1990 to 1991 he studied at the TUM School of Life Sciences Weihenstephan, before working as a brewer from 1991 to 1993 at the Old Dominion Brewing Company in Ashburn, Virginia (Metropolitan Washington DC area). From 1993 to 1995, he was a master brewer at the Old Dominion Brewing Company. In 1994, Ron Barchet, along with Bill Covaleski – both friends since childhood – founded the Victory Brewing Company with both their fathers as well as 31 investors. Their goal was to combine European quality with American ingenuity to produce a wide range of high-quality beers. To accomplish this, they decided to distinguish their products from those of other breweries by using whole hop cones and German malt. Victory opened to the public in 1996.

Raise a glass to the Tettnang Tettnanger

Ulrike Freund, CEO of the Gold Ochsen traditional brewery, appreciates her long-standing relationships with the hop growers

For her and her master brewers, Tettnang Tettnanger are "the best aroma hops, which is certainly due to the mild climate in the Lake Constance region". And Ulrike Freund should know. Aside from the fact that she has been CEO of the brewery Gold Ochsen GmbH since 1991, there has long been a tradition of brewing in her family. Their brewery was originally established in Ulm in 1597 and has been owned by the Leibinger family since 1867. The Gold Ochsen brewery has been located on Veitsbrunnenweg since 1894, where the company has access to their own deep well.

Raw ingredients from the region, a combination of new brewing techniques with conventional brewing methods as well as modern, energy-saving bottling technology – the foundation for the company's success. "Beer is part of our cultural heritage in Germany," says Ulrike Freund. "We see ourselves as keepers of this unique beer culture and focus on achieving high quality through freshness. The fact that Gold Ochsen beers taste great and are of high quality has been confirmed by a number of national and international awards, including the World Beer Cup and the European Beer Star."

Since 1936, the brewery has been buying its hops from the Tettnang-based Locher family. "We mainly use the Tettnang Tettnanger variety, but also Tettnang Hallertauer and Tettnang Saphir," explains Ulrike Freund, adding: "We associate our home with Tettnanger hops. Thanks to this area, the best growing region in the world, we benefit from consistently high quality and freshness. This is of paramount importance to our master brewers," says Ulrike Freund. "We even use Tettnanger aroma hops for our pilsners as we're convinced that, especially with the pilsners, the bitter notes becomes gentler and more pleasant with these hops."

In 2011, the Gold Ochsen traditional brewery in Ulm planted a hops garden for demonstration and teaching purposes on the brewery grounds together with hops specialist Anton Locher. Two years, the company presented the first Gold Ochsen vintage beer, Sherry Mandarina. Other home-grown beers soon followed. With stocks limited to 1597 magnum bottles, each of these specialty beers is bottled and corked by hand. These annual specialty beers are brewed using special aroma hops, such as Tettnang Saphir.

Of course, Ulrike Freund and her brewery always sets up a beer counter at the "Hopfenwandertag" (Hop Hiking Day), which takes place every two years in Tettnang. "The build-up to this event is always very exciting for me. The response among our employees is also great," she says. Ulrike Freund is grateful for the fact that "we were given permission to integrate the hop growing area in Tettnang into our promotional film. We also take part in the hop evaluation process. We place great value on long-term relationships." ■



For Ulrike Freund, CEO of the brewery Gold Ochsen GmbH, and her master brewers, Tettnang Tettnanger are "the best aroma hops, which is certainly due to the mild climate in the Lake Constance region". ***Picture: Lorenz Bee***

Ulrike Freund

1985: Ulrike Leibinger started her career in the brewery business. After training as a bank clerk and graduating from the administrative and business academy in Munich (VWA München), Ulrike Leibinger spent several years as a bank clerk at renowned private banks before returning to Ulm to work at her parents' brewery at the request of her father. There, she first obtained practical experience in accounting, HR and purchasing. In 1991 she took over management of the company. 2007: Ulrike Freund was awarded the economic medal of the state of Baden-Württemberg. 2018: The Order of Merit was presented to Ulrike Freund by the state's Prime Minister, Winfried Kretschmann.

A personal connection to Tettnang

Michael Weiß from the traditional brewery Meckatzer Löwenbräu is delighted with this "gift from God virtually on the doorstep"

"Because of the immediate proximity to our home region, the Allgäu, it almost seems like a "gift from God" to have this growing area for aroma hops par excellence right on our doorstep," says Michael Weiß. The managing partner of Meckatzer Löwenbräu and ambassador for this fourth-generation family business then adds: "I regularly visit the growing area to ensure I'm always in the loop about the quality of this important raw material at every stage of its growth, so that I can select the best lots." The brewery, he says, obtains around half of its Tettnanger hops directly from the hop growers. Michael Weiß: "Regular dialog is therefore extremely important. We're talking about decades of partnerships in which everyone knows each other's needs and takes them into account wherever possible."

Regional focus, top quality and personal contact with suppliers: These are the most important purchasing criteria of all for Meckatzer: "All of this is combined in Tettnanger hops. And it's why we have such close personal relationships with the hop growers and processors," explains Michael Weiß. Meckatzer says he uses the corresponding hop varieties from the Tettnang growing area for all his beers "in accordance with our unsurpassed standards for quality and flavor"

Due to their harmony of aroma and bitterness, the brewery prefers the aroma varieties Tettnang Tettnanger and Hallertauer Mittelfrüh. Michael Weiß: "Thanks to the almost Mediterranean climate on Lake Constance and the loose and deep soils of the hop gardens, extremely fine aroma varieties thrive in and around Tettnang under uniquely optimal conditions. At Meckatzer, we cover our annual requirements for the most part with very fine aroma hop varieties from the Tettnang growing area. At present, this equates to 560 quintals or 28,000 kilograms, which corresponds to an area of around 20 hectares."

As the market leader in the Allgäu/Lake Constance/Upper Swabia region, Meckatzer Löwenbräu enjoys an excellent reputation among consumers. "It's our duty to continue to do our best in all areas in the future," emphasizes Michael Weiß. "A decisive factor in our success was and is our partner-like relationships with all members of the value chain – from the hop and barley farmers and all the other suppliers to our employees and customers, as well as the consumers. Meckatzer Löwenbräu represents the pinnacle of the Allgäu region's culinary culture and looks forward to the future with great optimism, because more and more people are now basing their purchase decisions on the notion of "quality over quantity".

Michael Weiß recalls a defining moment from the start of his studies in Weihenstephan. "At that time, Prof. Narziss told us, his students: 'Every day without beer is a health risk.' In this respect, I've led a very healthy life so far!" ■



Michael Weiß from Meckatzer raves about the "uniquely optimal conditions" for hops in and around Tettnang. *Picture: PR*

Michael Weiß

graduated from high school in 1975, then studied business administration in Munich before completing degrees in business and brewing in Weihenstephan. These studies were followed by a nine-month internship at Beck & Co. in Bremen and eighteen months as assistant to the management at the Ottakringer brewery in Vienna. He joined Meckatzer Löwenbräu in 1985 and has been a managing partner of the brewery since 1993, and also serves as an ambassador for this fourth-generation family business.

"They are a very good match for us at Rothaus"

For Ralf Krieger, master brewer at the Baden state brewery, it all comes down to using the right regional raw ingredients

Lake Constance and the Black Forest – for Ralf Krieger, senior master brewer and head of technology at the Badische Staatsbrauerei Rothaus AG, this is a combination that is simply perfect for beer. On the one hand, there is the crystal-clear, soft water from seven company-owned wells and the Rothaus brewing process, and on the other, the fine aroma hops from individual lots, which Krieger personally puts under the magnifying glass at harvest time in Tettnang – both originated naturally in beautifully scenic areas, making them a perfect fit for one other.



"Without my passion for beer I certainly wouldn't have studied brewing, and so most likely would never have met my wife Barbara, who studied ecotrophology there, and therefore our daughter, Franziska, would never have been born," says Ralf Krieger. *Picture: PR*

Krieger is not only drawn to the Montfort town for its hop harvest. He also does not want to miss the "Hopfenwandertag" (Hop Hiking Day), and is also known to take leisure trips to Lake Constance with his family – "when spring arrives there but it's still winter in the Black Forest", grins the master brewer.

It is therefore fitting that Ralf Krieger has got to know and appreciate his contacts in Tettnang "as very quality-conscious, down-to-earth and reliable" people. "They are a very good match for us at Rothaus."

Aromatic hops from Tettnang and the Hallertau are used exclusively by the state brewery, which is situated 1000 meters above sea level. This proportion of hops obtained from these two growing areas varies from year to year. Based on Krieger's experience: "60 percent of the total amount we use comes from Tettnang, about 40 percent from the Hallertau."

It is important to him and his team that "with our hops and our malting barley, we have decades of partnership with our suppliers and growers – we firmly believe this is the only way to ensure all parties can do an optimal job while ensuring the best possible quality".

The Tettnang Tettnanger variety plays a special role in Rothaus beers. "This particular cultivar delivers a special, unique flavor," praises Krieger. "The interested reader might correctly infer that this applies in particular to our Tannenzäpfle beer."

More generally, it can also be considered the master brewer's guiding principle: "Without regional raw ingredients of the highest quality, such as the Tettnang aroma hops we use, our Rothaus beers would have a very different character." And that, of course, would have many effects – "on our products, the success our brewery and, of course, my work". This explains the firm conviction of Ralf Krieger: "For me, Tettnanger hops are a perfect fit for Rothaus – a regional product with the best quality and best flavor." ■

Ralf Krieger

was born, raised and educated in Neckarsulm (he graduated from high school in 1993). Both before and after completing his studies at the Technical University of Munich (TU München) in Weihenstephan (where he graduated as an engineer in brewing and beverage technology), he worked work at the Löwenbrauerei and Wildbadquelle Schwäbisch Hall. He moved to Rothaus (operational control) in 2002, later taking on roles in project management and quality and environmental management. Ralf Krieger has been the company's head of technology and senior master brewer since 2013.

“Small, but beautiful”

Willy Buholzer from the brewery Anheuser-Busch InBev praises the Tettnang growing region

As a child, Willy Buholzer regularly visited the Tettnang region with his father, who was responsible for buying European hops for Anheuser-Busch (and since 2008 for Anheuser-Busch InBev) for more than 40 years. “This fascinated me so much that, even as a child, I had a desire to be a ‘hop buyer’ for A-B,” recalls Willy Buholzer.



A love of hops runs in the family: Willy Buholzer has known about the Tettnang growing area since he was child. ***Picture: PR***

His childhood background proved decisive for his later choice of profession: Willy Buholzer is now Director of GPO Hops (GPO stands for Global Procurement Office) at Anheuser-Busch InBev, and is responsible for hop purchasing worldwide as well as the ABI hop farms in Germany, USA, Argentina and South Africa. Of the unique advantages of the Tettnang region, he says: “It is small but beautiful, and has a very good reputation and a long history. It specializes in superfine aroma varieties, which account for more than 80 percent of the total area. And research and development is also carried out there.” Buholzer praises the high-quality of the growers, trading companies and supply chain (i.e. cold storage and pellet processing) in Tettnang.

Anheuser-Busch InBev – for Buholzer, this means “quality first”. The company currently produces and sells more than 500 million hectoliters of beer per year in over 100 countries, under more than 400 beer brands, and employs 200,000 people in over 50 countries. At Anheuser-Busch InBev, Tettnanger hops – both the Tettnang Tettnanger and Tettnang Hallertauer varieties – are used predominantly in specialty and craft beers such as Goose Island, Devils Backbone, Karbach & Wicked Weed. For Willy Buholzer personally, Tettnanger hops are a “benchmark for quality and tradition”.

“Personal relationships with growers, trade and research are extremely important to us,” says the Director GPO Hops. “I fondly remember many interesting encounters and meetings on the Locher family’s beautiful hops farm and in their hops museum. And, of course, also many working lunches with the Tauscher family in the ‘crown’.”

In summary, Dr. Willy Buholzer says: “Hops are my life, and Tettnang has been involved in it for 40 years!” ■

Willy Buholzer

Willy Buholzer was born in 1964 in Switzerland. After graduating from university in 1990 – Lic.oec. from the HSG (University of St. Gallen) and Dr.oec. from the Technical University of Munich (TU München Weihenstephan) – he moved directly to Munich to take the hop job at A-B. Since then, he has been responsible for all hop-related matters at A-B (and at ABI since the merger).

A heart for Tettnang and its people

Eric Toft of the Brauerei Schönram also found his own happiness in the town of hops

"The 'terroir Tettnang' alone is a guarantee for a truly special and excellent hop profile. In terms of their flavor and bouquet, none of the local varieties can hide their origin," says Eric Toft, senior master brewer and technical manager at Brauerei Schönram, which has been owned by eight generations of the Oberlindober family.

Located just outside the city of Salzburg, this family-run, medium-sized brewery operates predominantly regionally, distributing 90 percent of its annual output of 95,000 hectoliters within a radius of about 60 kilometers. Six classic beers and four seasonal varieties are brewed all year round, as well as the Bavarian specialties Pale Ale, IPA and Imperial Stout, which appear several times each year. "The absolute classic hop for me, which is also my favorite, is the Tettnang Tettnanger," stresses Eric Toft. "Depending on the location and soil, it presents very different, yet variety-typical characteristics. For me, the Tettnang Hallertauer Mittelfrüh has a different, more diverse and finer profile than typically develops in its native soil. For several years now, Eric Toft has been enthusiastic about the virtually forgotten "Rottenburger Spät" variety, which Ludwig Locher and his family saved from extinction in Missenhardt.

Eric Toft could spend hours, perhaps even days, raving about Tettnanger hops. In total, hops from Tettnang make up about 15 percent of the total hop requirements at the Brauerei Schönram. "Whenever I need that 'special something' for our specialty or seasonal beers, I always first think of hops from Tettnang. For two types of beer we only use Tettnanger hops, for two other varieties they make up more than 50 percent of the hop profile."

Hops, hops, hops – Eric Toft's passion for them will never die. During his studies in Weihenstephan, Eric Toft's favorite pastime was to cycle through the nearby hop gardens. "Even as a hobby brewer I used hops from Tettnang. One week before I left for Germany in 1987, I drove 1800 miles straight from my hometown in the state of Wyoming to the Yakima Valley in Washington state to see the hop harvest."

He has a very special relationship with Tettnang: Eric Toft fell in love with the daughter of a hops farmer. "I always felt drawn to Tettnang and its unique location on Lake Constance. Personal relationships with the growers are very important to me, as well as getting together outside the hop season and maintaining my contacts."



Eric Toft, the brewery's senior master brewer and technical manager, says: "Beer never tastes better than after a long and busy day on the hops farm.".
Picture: Brauerei Schönram

Therefore, he says it is "a unique experience" for him to spend several days with our hop growers during the harvest. "For me, that's better than any vacation or long-distance trip. The aroma hanging in the air and the excitement on the farm are both indescribable. Beer never tastes better than after a long and busy day on the hop farm." ■

Eric Toft

Eric Toft was already an avid hobby brewer by the time he began studying geophysics in the United States (in Golden, Colorado). When he graduated, the only job opportunities in this particular field were in the Middle East. This didn't appeal to him, because for over a year Eric Toft had been mulling over the idea of turning his hobby into his job. Toft decided to take a fact-based approach to his future: "Where in the world can you learn this profession better from the ground up than in Germany?" he asked himself. So he went to Germany, learned German and started his training. "I stayed here to gain experience, and now, after more than 30 years, I'm finally 'stuck' here," says Eric Toft, smiling. Since 1998, Eric Toft has been the senior master brewer and technical manager at Brauerei Schönram.

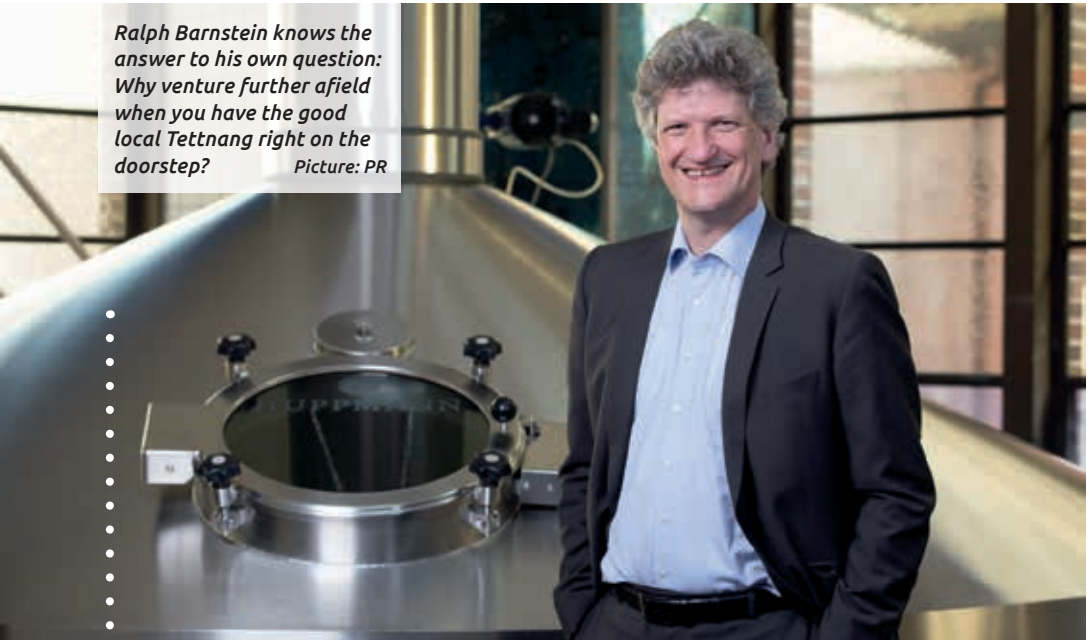
In seventh brewer's heaven with beer brewed from Tettnanger hops

Ralph Barnstein from the Dinkelacker family brewery praises his established and resilient relationships with the hop growers

"We absolutely depend on Tettnanger hops", says Ralph Barnstein, director of technology, logistics and IT at the Dinkelacker family brewery. Unsurprisingly, the brewery exclusively uses 100 percent Tettnanger hops for its beers – Tettnanger Perle, Herkules and Tettnang Tettnanger are the preferred varieties.

The Dinkelacker family brewery is owned by the eponymous families. "Our brands Dinkelacker, Schwaben Bräu, Sanwald and Wulle are well-known and appreciated throughout the state," explains Ralph Barnstein with pride. "With the best regional ingredients and the passion of our employees, we focus on what we do best: brewing special beers for the people of our region!" The Stuttgart-based brewery is especially proud of its Dinkelacker CD Pils, "for which we very carefully use only the very fine Tettnang Tettnanger for the dry hopping."

For Ralph Barnstein, the Tettnang growing area contains "the perfect trio of harmonious landscape, joie de vivre and our beer. In August, maybe even on 'Hopfenwandertag' (Hop Hiking Day), if you follow the path from the Hop Museum in the direction of Lake Constance you will see all the beauty of this region open up before you. To pass the deep green hop gardens under a steel blue sky with white clouds before enjoying the view over Lake Constance – simply fantastic. If you then hold a good beer, brewed exclusively with Tettnanger hops, in your hands, you're in seventh brewer's heaven."



Ralph Barnstein knows the answer to his own question: Why venture further afield when you have the good local Tettnang right on the doorstep? *Picture: PR*

The advantages of Tettnanger hops are obvious to Ralph Barnstein. "First of all, of course, there is the location and proximity of the Tettnang hop region. Why venture further afield when you have the good local Tettnang right on the doorstep?" He continues, explaining that he has benefitted from "very good and direct contacts and established and reliable links with the Tettnang hop farmers for many decades. Ultimately, when you also consider that the climate around Lake Constance and the special soils in the Tettnang region provide ideal conditions for top-quality hops, then you're totally convinced," says Ralph Barnstein.

Only recently, the sales team from the Dinkelacker family brewery held a meeting in the Hop Museum. "This enabled them to get their own impression of our hops, the fantastic people who nurture and care for them, as well as their unique taste. And with great success", says Ralph Barnstein. The family brewery, in turn, was "delighted that the Tettnang hop growers had already come to Stuttgart for a brewery tour. And every year, in good tradition, we welcome the 'hops royalty' to our brewery celebration as our guests of honor."

"The possibility to do an apprenticeship at Dinkelacker without any particular reference to beer has laid the foundation for all these special events," says Ralph Barnstein in retrospect. "I remain very grateful for this opportunity to this day." ■

Ralph Barnstein

1967: Ralph Barnstein was born in Schwäbisch Gmünd. From 1983 to 1986 he trained as a brewer and maltster at Dinkelacker-Brauerei AG. In 1989, Ralph Barnstein began his studies in Weihenstephan as a graduate master brewer, which he successfully completed in 1991. From 1993 to 1994 he worked as an inspector at the König Brewery in Duisburg. From 1994 to 1995 he studied industrial engineering in Pforzheim. From 1995 to 2006 he held various positions at Dinkelacker, including Head of Materials Management and Head of Controlling. Since January 2, 2007, Ralph Barnstein has been CEO of Dinkelacker Schwaben Bräu GmbH & Co. KG.

For Agostino Arioli, hops and their aroma are an anchor point

The Italian brewer's success story is closely linked to his love for the noble hop from Tettnang

For more than 20 years, Agostino Arioli has been writing a success story that includes many references to Tettnanger hops. Together with his brother and eight other partners, he founded Birrificio Italiano – a combined brewery, taproom and restaurant – in 1996 in Lurago Marinone, where the restaurant and pub still is. The brewery moved 2012 to Limido Comasco (a town of 4,000 inhabitants near Como in northern Italy).

"I graduated in beer technology with an experimental thesis on freshness, although that was quite some time ago," says Agostino Arioli. However, one thing has remained constant over the years: "Hops and their aroma are an anchor point that I even think about in my dreams."

This obsession has led him to a very special family of hops – those from Tettnang. "Tettnanger hops are used in my most famous recipes and have fundamentally shaped many products and episodes throughout my life as a brewer. I've been to Tettnang several times, and Lochers in Missenhardt are not just my hop supplier, but also among my closest friends," says Arioli.

So deep is this friendship that Arioli has even dedicated a beer to them, the "Cuvée de Missenhardt", which is a collaboration brew with Schoenramer Brauerei. It combines Tettnanger, Perle, Spalter and Rottenburger hops, which is the characterizing aroma. The Tipopils beer provides further proof of this close association. "As far as we know, it's the world's first dry-hopped pilsner, whose herbal aroma comes entirely from the flavor of the Tettnanger hops," explains Agostino Arioli, who is considered one of the pioneers of the Italian craft beer scene.

His approach to all this relies on "no corrective measures (such as pasteurization, additives, filtering) with regard to the beer. As a brewer, I study nature and combine the ingredients in such a way that they spontaneously produce the desired result." The aim is to create a product that is by no means elitist; on the contrary: "We want to produce a superb daily beer for the man in the street."

To help achieve this goal, Agostino Arioli relies on the hops from around Lake Constance, which he values for their "unique aroma profile, reliability and consistency" as well as "the human dimension that brings us into contact with wonderful people".

Agostino Arioli likes to emphasize the latter: "Each year we brew a harvest pilsner, Birrificio Italiano's Imperial Pils. My brewing partners and I travel by truck to Tettnang to pick freshly harvested hops – and celebrate this shortly afterwards with a big party on the estate of the Locher family."



Agostino Arioli's Birrificio Italiano is based on his own, very special beers, which require a special hop.
Picture: PR

This deep bond, coupled with Agostino Arioli's own creativity and originality, is expressed in the idea of the "green fly": "I will never forget the enthusiasm of the Germans when I introduced them to the idea of placing a fresh Tettnanger hops cone on the foam of our freshly hopped pilsner."

Agostino Arioli ...

... is a trained brewer who enjoys experimenting and has been methodically brewing his own, very special beer since 1985 – he even wrote his diploma thesis on this subject in collaboration with Carlsberg Italia and Filtrox Switzerland.
Arioli achieved his goal of opening the first brewpub in Lombardy in the 1990s.
With a network of contacts around the world, he manages exciting, cross-industry projects on the subject of sour beers and barrel-aged beers.
Today, Birrificio Italiano distributes its craft beers in Italy, the UK, the USA and Germany.

American brewery stays true to German regional hops

David Grinnell from the Boston Beer Company is proud of his friendships with the hop growers

Boston Beer has relied on Tettnanger hops ever since it was founded and began brewing in 1984. "The fine aroma and bitterness of our 'Boston Lager' would not be possible without Tettnang Tettnanger," says David Grinnell, Vice President of Brewing & Quality at the Boston Beer Company, who is also responsible for all brewery products as well as recipe development and ingredient selection for the many beers and other products made by Boston Beer.

According to David Grinnell, he visited Tettnang "countless times" during his professional career. "I really enjoy spending time with our many friends in the hop growing community there. Tettnang is also a region of tremendous natural beauty." At each hop farm in Tettnang he "saw the tremendous pride with which the growers go about their work. This is reflected in the cleanliness of the hop gardens as well as the care shown to the hops by the growers throughout the growing season and harvest. For me, this pride is also evident if you are fortunate enough to be invited into their homes and considered a friend."

In the case of Tettnang, it is, he says, not possible to separate the hops from the place in which they are grown. "We feel honored that our relationship with the hop growers and traders has always been very good," says David Grinnell. "Almost every day I remember tasting 'Samuel Adams Boston Lager', brewed with Tettnang Tettnanger and Hallertauer Mittelfrüh, as well as the 'Oktoberfest' or a very special 'Alpine Spring'." The latter is a heavily hopped cellar beer that is brewed with 100 percent Tettnang Tettnanger, explains David Grinnell with pride. "Tettnanger hops are shown on the label for this beer. That was a very proud moment for our brewing team and our company."

David Grinnell is also certain that his brewery will continue using hop varieties produced in Germany. "This begins with our understanding of the growers' business at a deep level, understanding their yields and cost pressures relative to other varieties, and working together to develop a forward contracting model that is right for both parties – for the grower and for Boston Beer." According to David Grinnell's experience, "it simply isn't possible to work at this level without having a personal relationship with the growers." At some point in every meeting there is always a snack, including beer and schnapps. "This is a signal that the business discussion is over and we can continue as friends, talk about our families and share our news from the past year. For me, the best thing is that these fine people are my friends." ■



Focused on his personal relationships with the growers: David Grinnell. ***Picture: PR***

David Grinnell

... studied at Columbia University, where he discovered the possibility of pursuing a career in beer brewing. His first professional opportunity arose in 1984 at the New Amsterdam Brewery in New York City. There, David Grinnell developed his focus on brewing quality lager beers, which he brought with him when he was hired as deputy master brewer at the Boston Beer Company in October 1988. For the first few years he focused on building and operating the new Boston-based brewery. Later, he developed it into a center for innovation and new product development for Boston Beer.

Today, David Grinnell is responsible for the recipes, brewing ingredients, large-scale products, product quality, efficient use of resources and, as he himself says, "fortunately, also for the beer culture".

The hoppy notes and high quality have earned the master brewer's trust

Richard Bengtsson of the Swedish company Spendrups uses Tettnanger hops in most of his 70 beer recipes

Richard Erik Gustaf Bengtsson first tasted the fruits of the wider region around Lake Constance in 1997 – at Rauch Fruchtsäfte in Rankweil/Austria. 2000 to 2006 were formative years spent in Berlin – first at the VLB research institute for brewing and malting technology, followed by two years as a scientist at Berlin Technical University. There, Bengtsson trained aspiring master brewers in chemical and technical analysis.



Richard Erik Gustaf Bengtsson is delighted with the "very high quality" and "exclusive aroma" of Tettnanger hops. *Picture: PR*

Now, as head brewer (and also R&D Manager) at Spendrups, he enjoys manifold links to Germany and its regional hops. It is therefore hardly surprising that the noble hop from Tettnang plays a major role in the 41-year-old's work.

Spendrups is a Swedish family business that employs 900 people and produces four million hectoliters of beverages each year, including two million hectoliters of beer. Founded in 1897 and based in Varby, south of Stockholm, the company is the largest supplier of beer to Systembolaget, a Swedish state-owned company with a monopoly on the retail sale of beverages with an alcohol content greater than 3.5% by volume.

As a result, 70 different beer recipes are manufactured at the Spendrups breweries, including Old Gold, Mariestads and Norrlands Guld Export. "Tettnanger hops play an important role here," says Bengtsson. "We use Tettnanger hops primarily as aroma hops for late hopping in the whirlpool or as dry hops." To put this into figures, the company utilizes around 1,500 kilograms of alpha acids from Tettnang hops each year.

Among these, "I prefer Tettnang Tettnanger and Tettnang Pearl," says Richard Bengtsson. And how are they used? "I use Tettnanger hops in almost all lager beers." It all comes down to his preference for the hoppy notes that Tettnanger hops impart to the German pilsner beers made by Spendrups.

Besides an exclusive aroma, Richard Erik Gustaf Bengtsson also attributes "very high quality" to Tettnanger hops, which he experiences first-hand each year. "I travel to the Hallertau and Tettnang with our hop suppliers, where we inspect the gardens and meet the planters."

This is always a special event for the Swede: "I love the nature and landscape there, as well as the great beers that are brewed in Tettnang and the surrounding area." ■

Richard Erik Gustaf Bengtsson

Richard Erik Gustaf Bengtsson has worked for Spendrups since 2006. As a master brewer (and head brew master since 2008) he has been responsible for all brewing processes in Varby, as well as the development of all beer products, from day one. Having served as "Function manager beer process/soft drinks" and "Production Manager", Bengtsson was promoted to R&D Manager in 2013, with a parallel role as company spokesman.
He gained experience of the beer brewing process from a young age – for example, at Falcon Bryggier AB, the Filtrox plant in St. Gallen and Svenska Malt AB in Halmstad.

Our well-traveled hops

The hop trading companies deal with far more than just distribution and sales

For a long time, hops were processed in the place where they were grown – the producer was the consumer. It was not until the development of traffic routes and intercontinental trade that this situation changed significantly. The area around Lake Constance, for example, became connected to the "world market" between 1847 and 1860. Hop cultivation increased – and consequently also the trade, production and consumption of beer.

Nuremberg was – following Hersbruck – the center of the global hops trade until the end of the 19th century: Almost 400 companies dedicated to the sale and distribution of hops were based in the city from 1880 to 1896.

The hops trade in our region also began at an early stage – there are records of price quotations from Munich, Nuremberg and Tübingen dating from 1860. Accounts from 1870 mentioned increased hop sales in the USA, where the harvest was evidently completely spoiled due to heavy rain.
An interesting contemporary document depicts a rifle target from 1865 (page 18). In the center, it shows a hop producer in traditional Tettnang costume introducing the local broker ("Schmuser", left) to a hop trader. The background is also revealing – it shows the Tettnang "Waaghaus" (weighing house) with so-called "pyramid hops". Traditional pole hops are shown in the center and an early wire system can be seen the left.
Today, following the establishment of multi-year contracts between producers and customers and a vast degree of consolidation within the industry, there are only a few hop trading companies left. Together, they form the "Hopfenwirtschaftsverband" (German hop trade association), whose 13 members had operated as the "Verband der Hopfenkaufleute und Hopfenveredler" (association of hop merchants and hop refiners) until the mid-1990s.
Four major hop trading companies are presented on the following pages. These portraits make one thing abundantly clear – modern hop trading companies do far more than merely buying and selling hops. ■



The allure of the hops is inescapable – both before and after picking. Processing in the harvesting center requires the optimal use of technology (picture: hops during conditioning) to ensure the hops' quality is maintained during drying and storage, so that the end product can rightly be called "green gold".

Picture: Stefan Trautmann

Pilot projects successfully implemented in Tettnang

The Barth-Haas Group is breaking new ground with the growers

For over 220 years, the Barth-Haas Group has been operating successfully via branch offices all over the world – in the jubilee year commemorating "175 years of hop growing in Tettnang", this family-owned company will celebrate its 225th anniversary. The company has been based in Nuremberg since 1794.

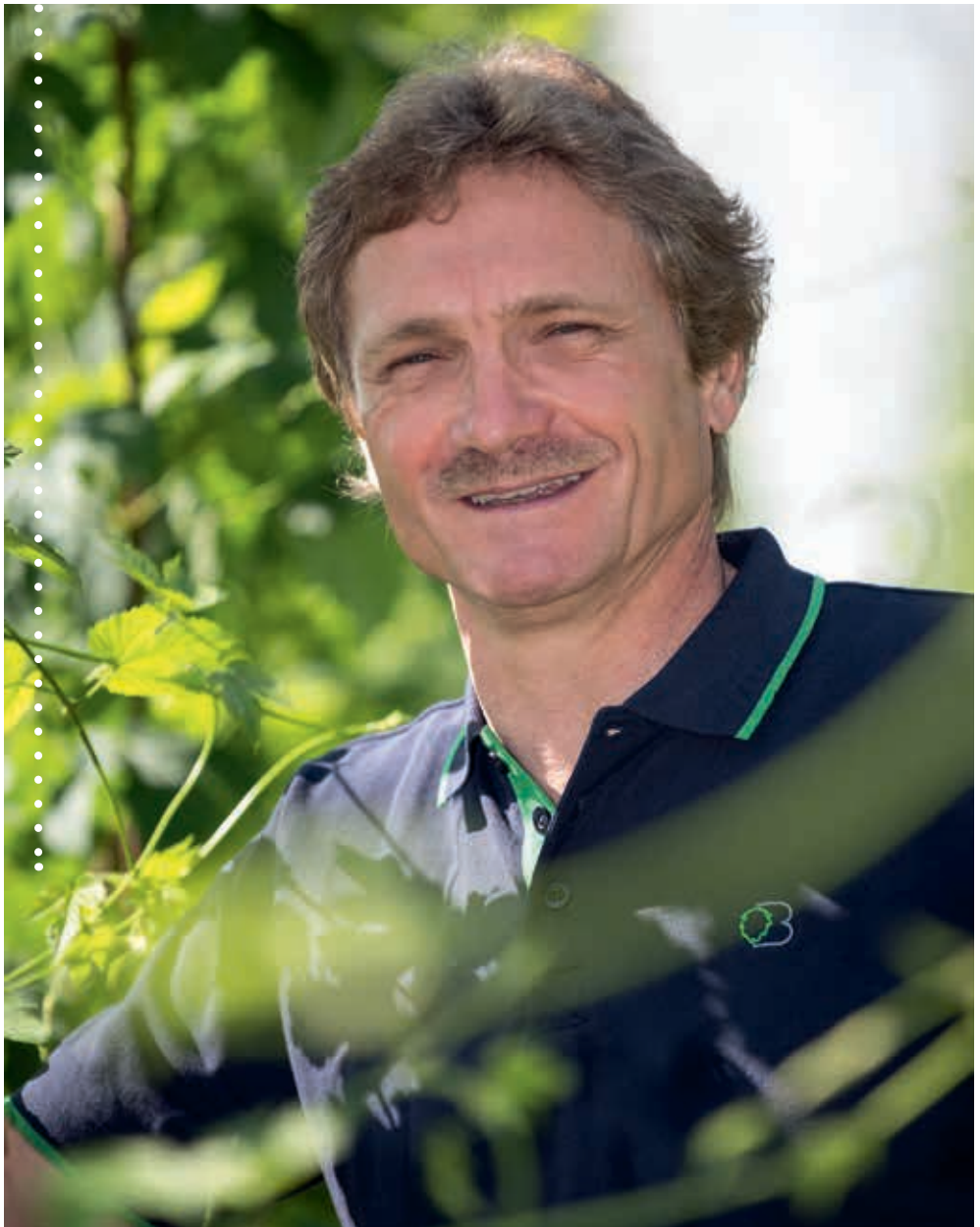
Tettnang has long been very important to Barth-Haas – until 1991, the family business was represented by commissioners in the area. Following the closure of numerous weighing halls in recent decades, Barth opened a new, mobile weighing station for the first time in 1992. Just one year later, the company acquired the weighing hall in the building owned by the Tettnang Hop Museum (now Hopfengut No20).

Over the years, the Barth-Haas group has introduced innovations in Tettnang, which later permeated throughout the entire hop industry. These included a pilot project to replace the previous custom of sealing the hop sacks (with lead seals, sealing wax and paint) with a modern adhesive label, as well as realizing the first direct connection of an electronic balance to a computer system.

Its close contact and long-term, trusting relationships with the hop growers are of great importance to Barth-Haas. For example, the company began hosting regular "Barth Info Evenings" to provide suppliers with information on current topics. "Intensive dialogue on all issues affecting the growers, as well as our professional advice on cultivation topics, such as variety selection and crop protection, provides both sides with inspiration and security," says the company. The "Barth trips" have already seen Tettnang's growers visit cultivation areas in the Czech Republic, England, and the USA, as well as many European breweries.

The Barth-Haas Group also advises breweries on the subject of hops, providing. information about the raw material itself as well as processing technology, recipe creation and product selection.

According to the Barth-Haas company philosophy: "We have developed from a dealer to a service provider for hops and want to inspire our customers, suppliers and employees to develop innovative ideas and break new ground with us." ■



For Dr. Reinhold Kugel (head of product safety and quality), close contact and long-term, trusting relationships with the hop growers are extremely important. ***Picture: PR***

Important partner for the hop growers

BayWa puts its trust in Tettnang as a traditional hops location

Covering around 18,500 hectares, more than 90 percent of the German hop-growing areas are in Bavaria and Baden-Württemberg – the territory in which BayWa has its roots. As the fourth-largest hop marketer in Germany, the Munich-based trading and service group exports hops from Tettnang and the Hallertau to more than 50 countries worldwide.

In Tettnang, BayWa is the market leader with a share of more than 50 percent. In 2016, the company invested four million euros in the construction of a new hop pellet plant in this traditional location and, in combination with equipment to package hops as bales, has created a unique hop processing plant in our region. The majority of the hop harvest is processed into pellets. During this process, the hops are first ground and then pressed. This natural product has a longer shelf life in this form and can also be stored in a space-saving manner. The main customers are brewers based in our region and throughout Germany, as well as overseas customers.

As a full-line supplier for agricultural businesses, BayWa is also an important partner for the hop growers. Throughout the year, the Tettnang fruit and hop center offers equipment, material for trellis construction as well as a consulting service for hops cultivation. It also houses a farm machinery dealership and a repair shop. In addition, at its Tettnang location BayWa operates a plant which cuts the support wires for the hops to the correct dimensions as ordered by the farmers. The company has additional locations in Kressbronn and Ravensburg that provide goods and services for hop growers.

BayWa has also been processing and selling hops from the Hallertau since 2011. Its new agricultural and hops competence center was opened at the beginning of June 2018 in the Upper Bavarian town of Bruckbach near Wolnzach. In conjunction with an in-house trial brewery and "hop garden", the center focuses on growing hops for tasting purposes. By enabling interested brewers and traders to taste locally brewed beers directly, the center provides them with in-depth knowledge about the sensory properties of the different hop varieties. Together with research institutes and plant breeders, the BayWa hop competence team is also working on the development of both new and existing hop varieties – for example, with regard to aroma and taste, pest resistance and yield, as well as resource-efficient cultivation. ■



The BayWa location in Tettnang.
Picture: BayWa AG



The BayWa hop pelleting plant during its inauguration in 2016. ***Picture: tt-bilder.de***

The art of self-marketing

The HVG is the world's largest consortium of hop growers

The beginnings of the HVG hop processing cooperative go back to 1953, when the hop growers in the Hallertau region joined forces in order to market their hops by themselves. In 2000 and 2001, growers from the Elbe-Saale, Jura and Tettnang cultivation areas got together to form an organization that remains the world's largest concentration of hop growers in a single cooperative. This constellation ensures reliable deliveries of German hops of the highest quality and variety for the international brewing industry. At the same time, the HVG passes on the requirements of breweries all over the world to its community of growers, to ensure that the hop producers can all follow suit.

The HVG markets more than 20 different hop varieties from Germany. In addition to the important bitter varieties, a significant role is played by the aroma varieties and especially the high-quality regional varieties, such as Tettnang Tettnanger. There are also special "flavor hops" which produce new and different flavor notes in the beer.



The employees of HVG Hopfenverwertungsgesellschaft e.G. ***Picture: PR***

The hops are processed in the world's largest and most modern hop processing plants, which have been used by the growers via the HVG since 1982. More than 200 employees are involved in processing the hops – predominantly into pellets and extract – in Wolnzach, Mainburg and St. Johann.

As a producer organization for the German hop growers, an important goal of the HVG is to strengthen their competitiveness in this country in the long term. This includes, for example, modernizing the processes for hop drying, quality assurance and testing of raw hops, as well as research and sales promotion.

Within just a few decades, the hop industry's oldest marketing cooperative has become one of the most important marketing organizations for German hops. Today, breweries in more than 100 countries on all continents purchase German hops directly from the growers via the HVG – and "at fair prices", as the HVG notes. The marketing of Tettnanger hops plays a central role among the many activities undertaken by HVG on behalf of the German hop growers. ■



The organization is based in Wolnzach. ***Picture: PR***

Important trading partner in Tettnang

Simon H. Steiner Hopfen relies on direct contacts

The history of the hop trading company Simon H. Steiner Hopfen, which was founded in 1845 at the company's Laupheim location near Ulm, is closely linked to the Tettnang growing area.

Simon Heinrich Steiner was born in 1825 and, along with his father Heinrich, was among the pioneers of the hop trade that began in Laupheim around 1840. Hops were cultivated in this region until 1918.

In 1886, Sam Steiner, the 20-year-old son of Simon Heinrich Steiner, founded a hop trading company in New York under the name S.S. Steiner. The business imported hops into the USA from Europe, including from Tettnang, and delivered them to American breweries. Today, the company has its headquarters in New York and is managed by the sixth generation of the original owner's family.

In 1917, Hedwig Steiner, the wife and widow of Louis Steiner, acquired the largest hop estate in Tettnang-Siggenweiler at that time. The Steiner company thus became the first hop trading company in Germany with integrated hop production. In the 1970s, the decision was taken to cease hop growing in Tettnang and sell the estate.

Today, the Steiner Group is one of the leading hop marketers worldwide and a main supplier to the global brewing industry.

Its portfolio includes a wide variety of hops from all parts of the world – including Tettnang. In addition to many other innovative products, the company supplies new, experimental hop varieties, hop oils, hops extracts, kettle products, downstream products, products with antibacterial and antioxidant properties, as well as basic ingredients for phytopharmaceutical applications.

At present, the company's highly capable team of agricultural experts also buys raw hops from all of Europe's growing regions via direct contacts among growers and growers' organizations. The German hop growers are the main suppliers to the company's processing plants in Au and Mainburg/Hallertau. The Tettnang growing region is home to around 130 hop farms, which remain important trading partners for Steiner and its customers in more than 90 countries worldwide.

Steiner works directly on site alongside BSL Betriebsmittel Service Logistik in Meckenbeuren, whose expertise is greatly appreciated by the growers. ■



The long tradition of hop growing in Tettnang also encompasses the growers' links to the hop trading companies. The importance of change as well as tradition can be seen in the evolution of the means of transportation used by the industry. ***Picture: PR***



The Hopsteiner team is working hard on breeding new hop varieties worldwide. ***Picture: PR***

"All in all, our future expectations are positive"

HPV CEO Jürgen Weishaupt believes the growers are well prepared to face future challenges

Jürgen Weishaupt has been managing the destiny of the Hop Grower's Association for more than 20 years. In the following interview, he looks back at the past and describes the current status quo. He also dares to take a look into the future.

Mr. Weishaupt, what has changed over the last 20 years?

In the first ten years of my work, our entire focus was the alpha acid content – I would even call it "alpha fetishism". How much alpha acid does each variety contain? What does a kilogram of alpha acid cost? These questions were the focus of our discussions. Fifteen or twenty years ago, the craft beer movement started in the USA. This movement revolutionized the hop market in the truest sense of the word – by focusing on the hops themselves. This in turn gave the hops a unique value – they have since become the be-all and end-all for the growers and brewers. Although beer has several important ingredients, it is now the quantity, variety and flavor profile of the hops that shape the identity of many beers. The brewers want to smell, taste and feel the hops and have contact with the growers. This has led to close partnerships between the brewers and growers. Another positive effect for the growers is that, due to the arrival of new beers, a lot more hops are needed. While each hectoliter of the "traditional" beers is hopped with 200, 300 or a maximum of 400 grams of hops, these represent the absolute minimum quantities for the "new" beers. Furthermore, the traditional practice of dry hopping has been revived. The booming craft beer scene has provided fresh impetus for Tettnang in particular, thanks to the town's global reputation as THE aroma hops region par excellence. In addition, the movement has increased the popularity of the traditional beers.

Hops from Tettnang have an excellent reputation worldwide. What are you doing to preserve this?

Our motivation and the basis of our activities and operations is to produce the highest quality raw materials for our customers. For example, many years ago we developed the "Neutral Quality Assessment" (NQF). As a result, each lot – and that means around 1,000 lots per year – is examined and evaluated in our on-site laboratory using a bonus/malus system with regard to a variety of quality parameters, such as water content, leaf/stem ratio, number of bracts, varietal purity, seed content, impurities, diseases/pests, alpha acid content, color and aroma. For the growers, the NQF is a great incentive: Top quality is rewarded with bonus payments, while inferior quality lots incur a penalty. Many customers visit our growers in the spring, before the harvest or in the fall to participate in the selection/scoring process for the flavor profile of their hops (this is also known as "matching"). Furthermore, Tettnanger hops have received a Protected Geographical Indication (PGI), a form of EU-wide trademark protection with various specifications. Many of the region's farms are ISO-certified with special cultivation and quality parameters.



Since 1998, Jürgen Weishaupt has steered the fortunes of Tettnang's hop growers as CEO of the HPV. ***Picture: Jens Lindenmüller***

Several years ago, the growers stopped exclusively cultivating the Tettnang Tettnanger variety ...

That's right. Nevertheless, our core competence remains the Tettnang Tettnanger regional cultivar, which occupies over 50 percent of our growing area – during 175 years of cultivation we have developed unrivalled knowledge of this variety's delicate aroma. Over the past 40 years, there have been several attempts to grow the Tettnanger variety in other areas, such as the United States. All of these plantations have since been grubbed up, because the unique, delicately spicy aroma and the hop flower do not develop as well outside Tettnang with its balanced Lake Constance climate – which is why we say that our hops have "the finest aroma combined with delicate bitterness to refine the premium beers".

How many varieties are grown in Tettnang?

In total, we currently have a portfolio of 25 varieties in cultivation in the Tettnang growing area, and many of our farms have managed to grow their businesses by cultivating multiple varieties, as this allows them to diversify their working time. Our growers have learned to be and to remain flexible – even if this seems somewhat contradictory given the long lives of the hop plants, which are a permanent crop.



A meeting place for professionals – the grading of the hops. *Picture: VDH*

Hops from Tettnang are repeatedly honored with prizes.

That is correct. We are proud of our "delicatessen of the Republic" here in the booming Lake Constance region, where growing space is scarce. The fact that our produce is of the highest quality is demonstrated every year via numerous prizes, such as those presented at the German Hop Exhibition, the German Hop Champion awards, and at beer competitions such as the World Beer Cup and the European Beer Star. Indeed, at the German Hop Champion 2018 awards, Georg Vollmer from Tettnang took home the gold medal for the Tettnanger regional cultivar.

In the words of our long-serving chairman, Dr. Bernhard Locher: "Tettnanger hops are not just another agricultural product – they are a chemical marvel".

In another important development, in 2012, the German hop industry set up an all-encompassing phytosanitary monitoring system which is designed to provide early warning – i.e. before processing and marketing – of potential hazards/ active substances, for example, if certain tolerances are exceeded. In addition, the Tettnang region has been committed to promoting sustainability since 2014. With sustainable production, we want to secure hop production for future generations. Therefore, hop growers from the Tettnang region are committed to working in accordance with environmental, economic and social sustainability criteria based on the guidelines set out by the Sustainable Agricultural Initiative platform (SAI).

What challenges will you face in the future?

One challenge will certainly be dealing with climate change. Uniformity and predictability are decreasing, while extreme scenarios are becoming more frequent. Due to the shorter intervals between bouts of extreme weather, i.e. low or heavy precipitation or long dry periods with high temperatures as we saw in 2018, we are seeing greater fluctuations in terms of yield and contents – both positive and negative. We are currently trying to counteract this – for example, via a clone selection and a breeding program for the Tettnanger variety. New hop varieties could also provide an answer.

The issue of large-scale irrigation is repeatedly raised in times of climate change. Eleven percent of our gardens is currently irrigated. This number varies regionally; for example, it is higher in the Argental region. However, the notion of submerging more hop gardens does not sit particularly well with the authorities. In addition, we do not have large monocultures, but rather small family farms – a structure that makes irrigation is difficult. Other challenges we face include an increasing shortage of skilled workers and seasonal staff, not least due to competition from the booming high-tech industry in the Lake Constance region, as well as limited availability of crop protection products. Ever fewer active substances are permitted – more and more of them are being banned. The ability of the growers to manage the plants' resistance to pests is suffering, while at the same time the manpower situation is becoming critical. Added to this is the bureaucracy, which has been increasing for years. Furthermore, it is also a challenge to create a sense of mutual understanding and cooperation between the local population, industry, trade, tourism and agriculture within our highly populated "boom region".

We are proud and happy that we have a lot of young, well-educated, dedicated and motivated hop growers who have been investing in harvesting centers, drying and conditioning systems and scaffolding in recent years. All in all, we have positive expectations about future developments in the Tettnang region. Another reason for this is that, in addition to the breeding programs, long-term research is underway to find alternative or supplementary fields of application for hops. Another positive factor is our partnerships with the many breweries who promote the use of Tettnanger hops in their beers as a mark of premium quality and high value. "Brewed with Tettnang hops" – a quality reference you frequently see on beer labels, especially in the USA.

Please take a look into the future. How will things look in 20 years?

We assume that the craft beer scene and the brewing industry will remain stable and continue to grow. As far as hop production is concerned, the days of double-digit growth rates seem to be over for the time being. We will have fewer, but larger farms – with more capital and more investment tied to a greater degree of risk. There will still be cycles in hop growing, just as we've experienced in the past. If things were to only go upwards or in one direction, it would be the first time in history.

What is your wish for the hops from Tettnang?

My wish for the Tettnanger hops brand is that it develops positively and sustainably and that we consolidate our already close partnerships with national and international breweries. ■

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Tettnang 2019
175 years of
hop cultivation

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For 175 years, the finest hops have been grown in Tettnang.
They are exported all over the world.
With this in mind, we would like to look back to the beginnings, to describe the current status quo and to look ahead to the future.

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TETTNANG HOPS
175 years
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