

## Advantages and benefits for members of the Society of Hop Research (Gesellschaft für Hopfenforschung e.V.)

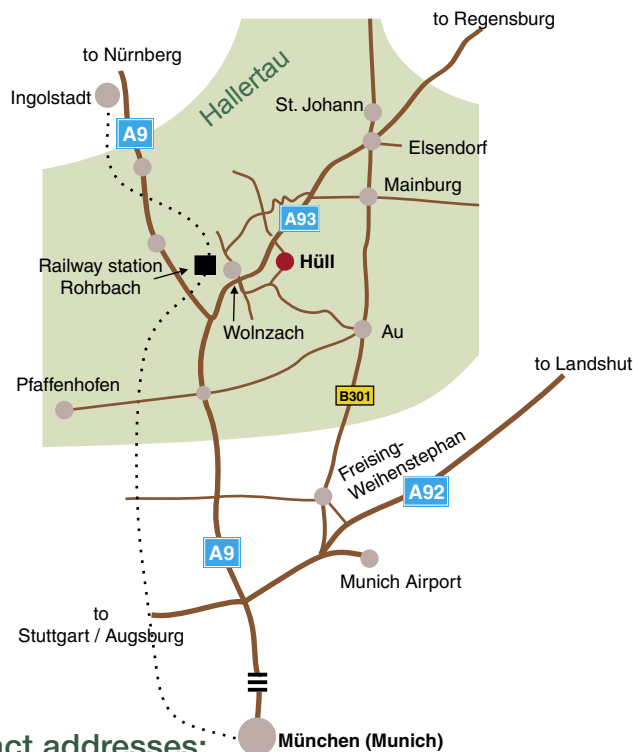
- >> Member of a solidarity committee, founded as early as 1926 by far-sighted and responsible brewers, that guaranteed the supply of high quality hops ever since
- >> Co-operation in specialist committees (e.g., Committee for Technology and Science), ensuring influence on the main fields and objectives of research
- >> Information on the latest developments (e.g., Newsletter and Annual Report)
- >> Possibility to award research projects

## Research projects are supported by, e.g.:

- >> The Bavarian State Ministry for Agriculture and Forestry (Bayerisches Staatsministerium für Landwirtschaft und Forsten)
- >> The Federal Ministry for Food, Agriculture and Consumer Protection (Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz)
- >> The German Federal Foundation for the Environment (Deutsche Bundesstiftung Umwelt)
- >> European Hop Research Council
- >> Scientific Station of Munich Breweries (Wissenschaftliche Station für Brauerei in München e.V.)
- >> Research Funding of the German Breweries (Wissenschaftsförderung der Deutschen Brauwirtschaft)
- >> various breweries and companies of the hop industry in Germany and abroad

Practice-orientated research work for the hop and brewing industry

## Hop Research Center Hüll



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The successfully practised hop research at Hüll is the result of a purposeful co-operation between the **Society of Hop Research** (Gesellschaft für Hopfenforschung e.V., run according to private law), supported by its members — mainly breweries — and the **Free State of Bavaria**, represented by the Bavarian State Research Center for Agriculture (Bayerische Landesanstalt für Landwirtschaft).



Gesellschaft für Hopfenforschung

# The Hop Research Center Hüll in the heart of the Hallertau

With a worldwide recognised competence and completely independent of company interests, in Hüll all questions concerning hops are dealt with.

The central geographic situation of the Hop Research Center Hüll in the Hallertau, which is the largest coherent hop growing region in the world, has many advantages:

- >> Direct contact to the hop growers in the Hallertau
- >> Immediate proximity to the world's most important hop trading companies and processing plants as well as to the research laboratories in Au, Mainburg, St. Johann, and Wolnzach
- >> Proximity to the leading institutes for brewing technology and agricultural science of the Technical University of Munich in Freising-Weihenstephan



## Financing institutions of the Hop Research Center Hüll

### The Society of Hop Research (Gesellschaft für Hopfenforschung e.V.)

promotes current main fields of research and puts at disposal free of charge:

- >> the required experimental farmland for the breeding of new cultivars
- >> the institute buildings with modern laboratory equipment
- >> three green-house buildings (1,100 m<sup>2</sup>)
- >> buildings and equipment for hop growing trials

### The Free State of Bavaria (Freistaat Bayern)

- >> bears the personnel expenditure for research and advice
- >> covers the current operating costs

## Main fields of research

### 1. Breeding of new hop cultivars

- >> with excellent brewing quality
- >> with good resistance to pests and diseases
- >> with good agronomical characteristics
- >> by applying classical cross breeding, supported by biotechnology and genome analysis.

New cultivars that are in line with current market requirements are released to growing after registration.

Hop cultivars from Hüll:

Aroma cultivars		High alpha cultivars	
Perle		Hallertauer Magnum	
Hallertauer Tradition		Hallertauer Taurus	
Spalter Select		Hallertauer Merkur	
Saphir		Herkules	
Opal			
Smaragd			

### 2. Environmentally friendly and quality-oriented hop production

- >> Development of new growing techniques and environmentally sound production procedures
- >> Optimised fertilisation to avoid groundwater pollution and to minimise the nitrate content in hops
- >> Reduction of soil erosion and nitrate leaching by green manure cropping
- >> Development of optimum drying and conditioning procedures to ensure brewing quality



### 3. Development of strategies to control pests and diseases

- >> Tests to optimise the use of pesticides, without detrimental residues and a maximum of ecological harmlessness
- >> Development of control thresholds and forecasting systems
- >> Examination of suitable pesticides
- >> Optimising of spraying techniques
- >> Development of alternative pest control methods

### 4. Analysis of all important hop constituents, and development of new analytical methods

Bitter substances	conductometric titration, HPLC, NIR
Essential oils	head space gas chromatography, water steam distillation, SPME (= solid phase micro-extraction)
Polyphenols	Xanthohumol, Quercetin, Kaempferol using HPLC; total polyphenols, flavanoids with spectrophotometry

- >> Organisation and evaluation of ring analyses for the quality assurance in alpha-acid determinations

### 5. Transfer of research results into practice by competent and detailed advice of hop growers