## BEGLEITURKUNDE

Are an infiliated to the decry to retain in (EVVE) (In Helest Free was \$5, 75 th 7 th and the finding dark for the first state of the first state

## DEUTSCHER SIEGELHOPFEN

(consideration



## Hallertauer Magnum

NE ENTERN BYLLIOT

SEVICET BUKE FERUTTE

Astraire

FF-II

SIDE STATE OF AUGUST AND AUGUST A

B.P.P.



## Hallertauer Magnum Characteristics

#### **Bitter substances**

alpha-acids	11.0 -16.0 %*
beta-acids	5.0 - 7.0 % *
cohumulone	21 <b>–</b> 29 % <sup>×</sup>
colupulone	38 - 48 % <sup>×</sup>

#### **Polyphenols**

total content	2.0 - 3.0 % *
xanthohumol	0.4 - 0.5 % *

#### **Aroma substances**

total oil	1.6 - 2.6 % •
myrcene	30 <b>–</b> 45 % <sup>×</sup>
linalool	$0.2 - 0.7 \%^{\times}$
beta-caryophyllene	8 – 13 % <sup>×</sup>
aromadendrene	< 0.2 % <sup>×</sup>
humulene	30 - 45 % <sup>×</sup>
farnesene	<1% ×
beta-selinene	0.3 - 0.8 % *
alpha-selinene	0.3 - 0.8 % *

<sup>(\*)</sup>weight-% - (×)% relative - (·)ml/100g hops

#### **High-alpha variety**

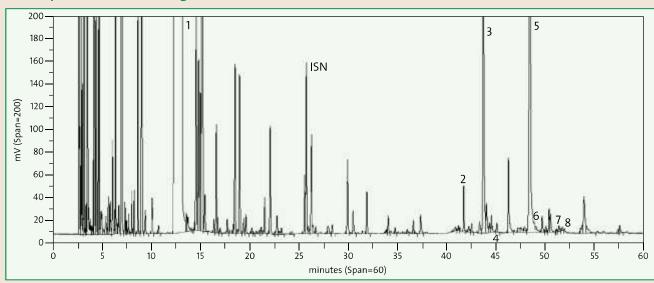
- very high bitter value
- average aroma
- good storage stability

#### Resistance to disease:

• wilt	good to very good
<ul> <li>downy mildew</li> </ul>	good
<ul> <li>powdery mildew</li> </ul>	very low

Ripening time medium late to late
Storage stability good
Average yield 2,000 kg/ha

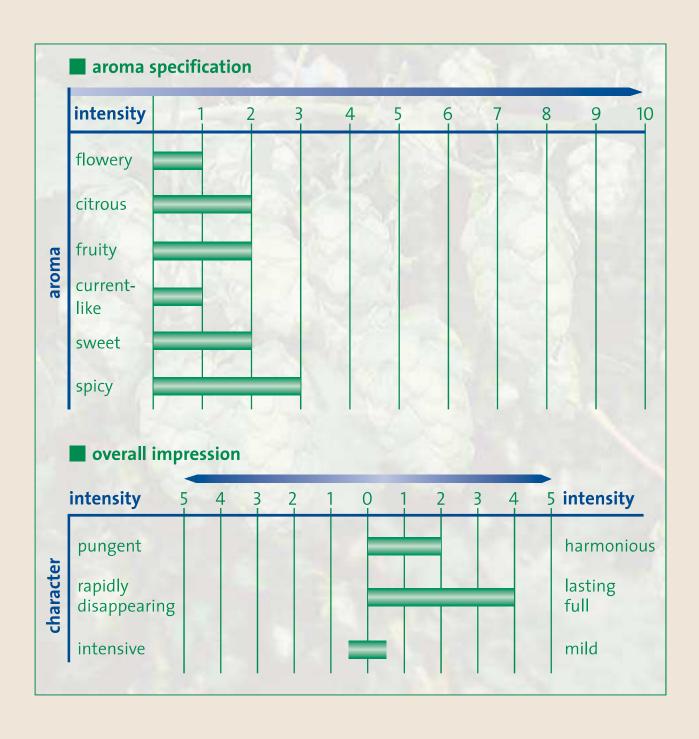
#### **Headspace Gaschromatogramme**



1 = myrcene · ISN = internal standard · 2 = linalool · 3 = beta-caryophyllene · 4 = aromadendrene · 5 = humulene · 6 = farnesene 7 = beta-selinene · 8 = alpha-selinene

## Hallertauer Magnum

### **Evaluation**



Hallertauer Magnum is a product of the Hop Research Centre in Hüll with high yields and strong growth. This high-alpha variety was registered in 1993 and quickly became important.



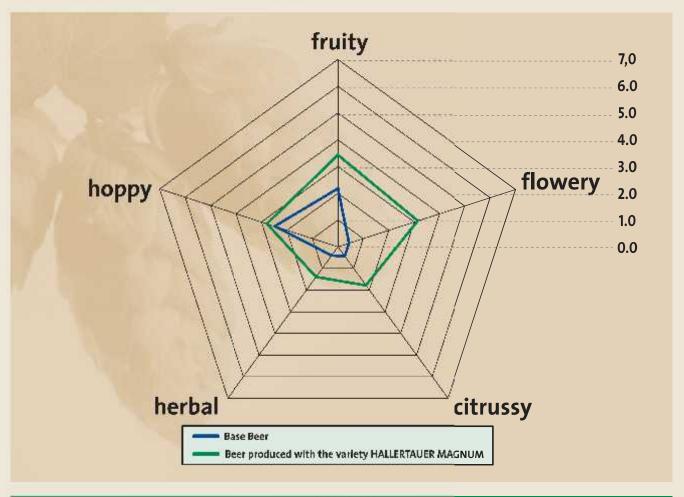
# Brewing trial: Hallertauer Magnum



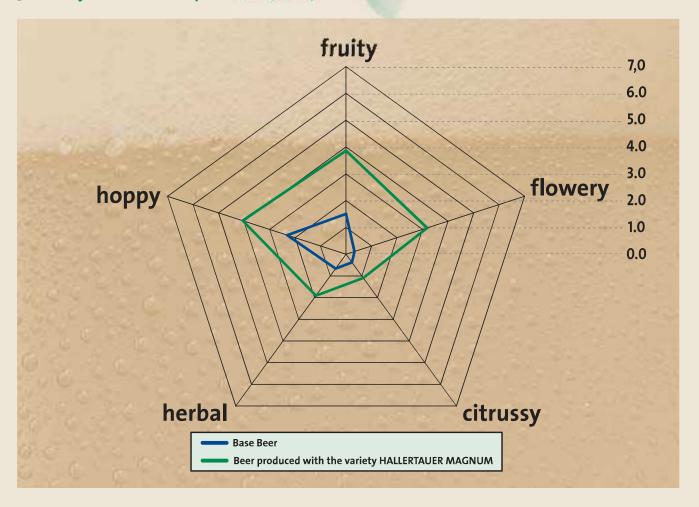
#### 1. Beer Analysis

co-isohumulone	7.6 mg/l	iso-xanthohumol	0.40 mg/l
n-isohumulone	12.3 mg/l	xanthohumol	0,02 mg/l
ad-isohumulone	3.2 mg/l	linalool	21 µg/l
Σ isohumulones	23.1 mg/l	total polyphenols	164 mg/l
bitterness	24 EBC-BU		

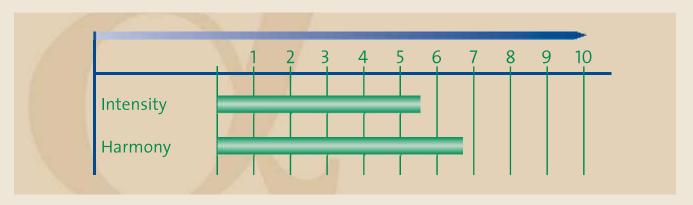
#### 2. Sensory Evaluation "Hop Aroma" (Smell)



#### 3. Sensory Evaluation "Hop Flavour" (Taste)



#### 4. Sensory Evaluation of the Bitterness



The beer of the variety Hallertauer Magnum has a harmonic bitterness of medium intensity. In smell its delicate aroma inclines towards a flowery and fruity flavour, in taste it also has a hoppy tang.