

# BEGLEITURKUNDE

Als amtliches Mitglied der Vereinigung (EWS) Nr. 161/77 vom 23.7.1974  
gegründet durch Verordnung (EWG) Nr. 1184/77 vom 15.5.1977

## DEUTSCHER SIEGELHOPFEN

(Einheitlich)



SORTE

Opal

GRUPPE

NR. BALLEN/BALLOT

GEWICHT IN KG (BRUTTO)

Aufbereiter

ORT

GEN

19

PLATZ  
SIEGEL

BEI DER VERANSTALTUNG

Nr.:

1



# Opal

## Characteristics

### Bitter substances

alpha-acids	5.0 – 8.0 % *
beta-Säuren	3.5 – 5.5 % *
cohumulone	13 – 17 % <sup>x</sup>
colupulone	33 – 48 % <sup>x</sup>

### Polyphenols

total content	3.0 – 5.0 % *
xanthohumol	ca. 0.4 % *

### Aroma substances

total oil	0.8 – 1.3 % *
myrcene	20 – 45 % <sup>x</sup>
linalool	1.0 – 1.5 % <sup>x</sup>
beta-caryophyllene	8 – 15 % <sup>x</sup>
aromadendrene	< 0.2 % <sup>x</sup>
humulene	30 – 50 % <sup>x</sup>
farnesene	< 1 % <sup>x</sup>
beta-selinene	0.3 – 0.8 % <sup>x</sup>
alpha-selinene	0.3 – 0.8 % <sup>x</sup>

### Fine aroma variety

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

### Resistance to disease:

• wilt	good
• downy mildew	good
• powdery mildew	good

### Ripening time

medium early

### Storage stability

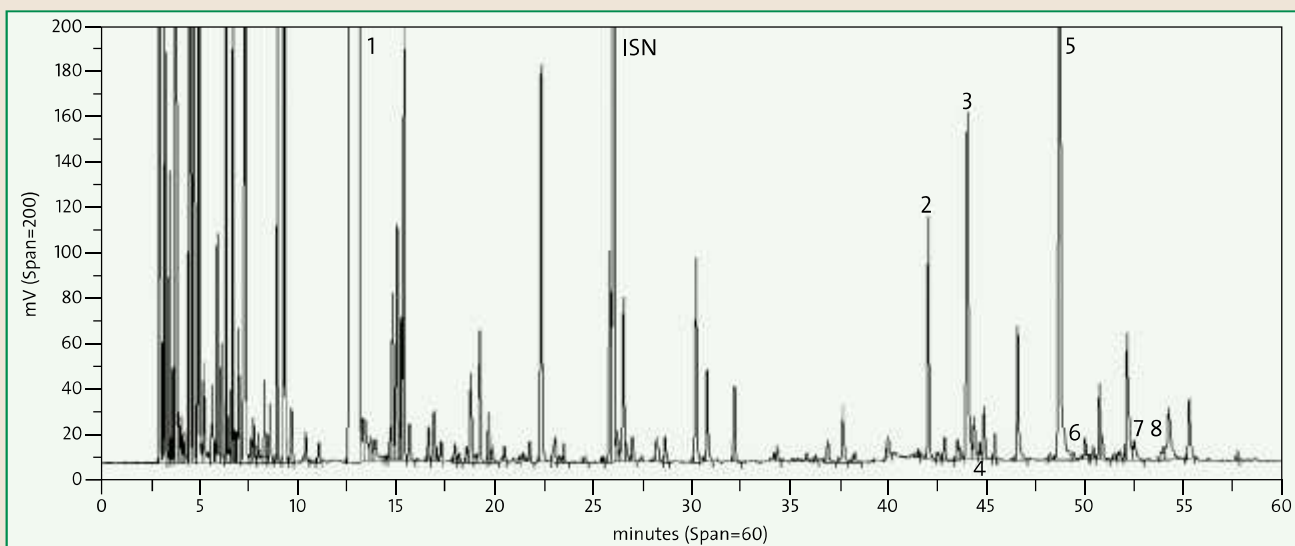
average

### Average yield

1,850 kg/ha

(\*) weight-% – (x) % relative – (°) ml/100g hops

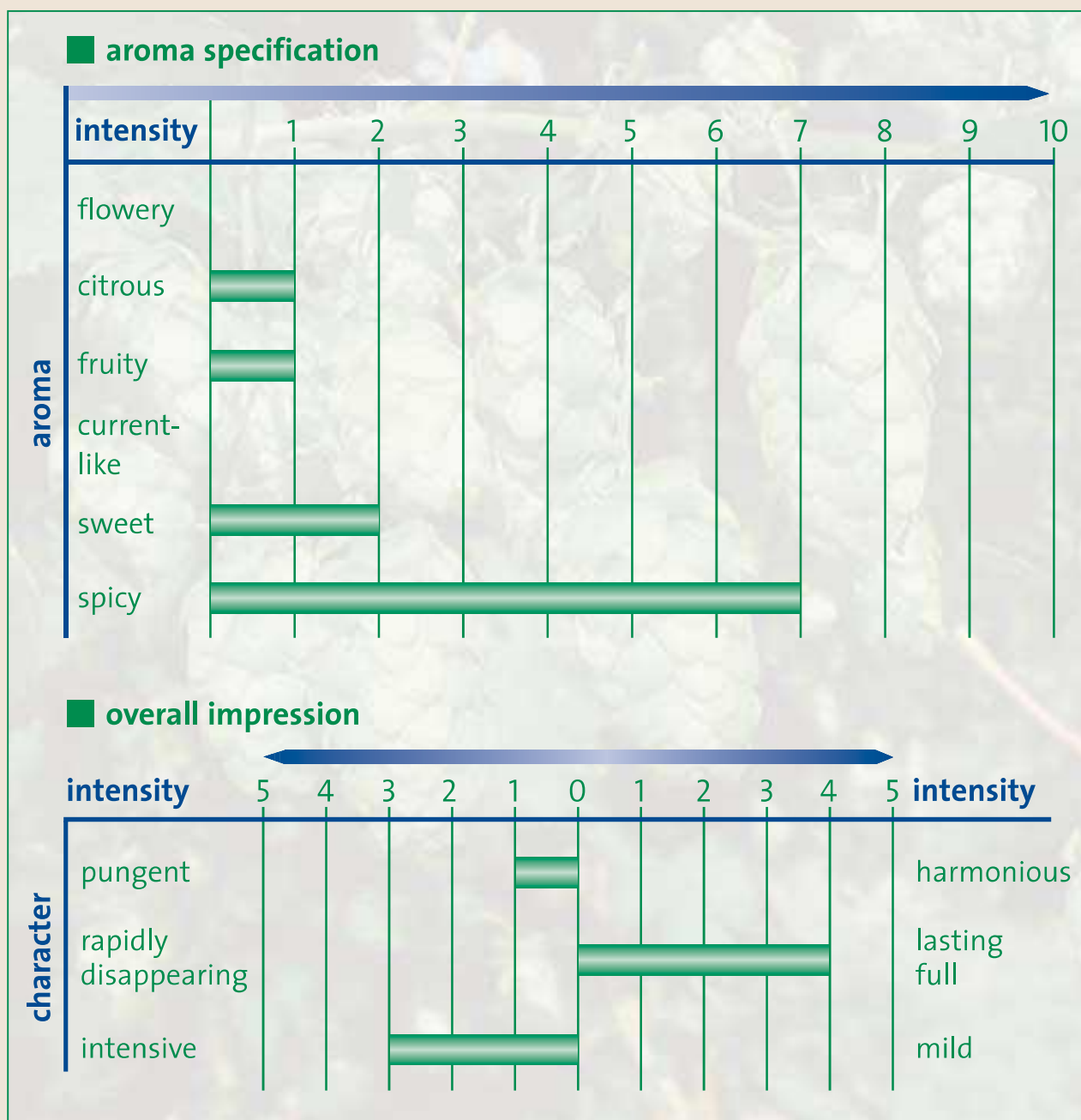
### Headspace Gaschromatogramme



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

# Opal

## *Evaluation*



Opal is an aroma variety from the Hop Research Centre in Hüll with good resistance characteristics, high yields and very good production characteristics. This aroma variety was registered as a variety in 2001 and has been marketed since 2004.



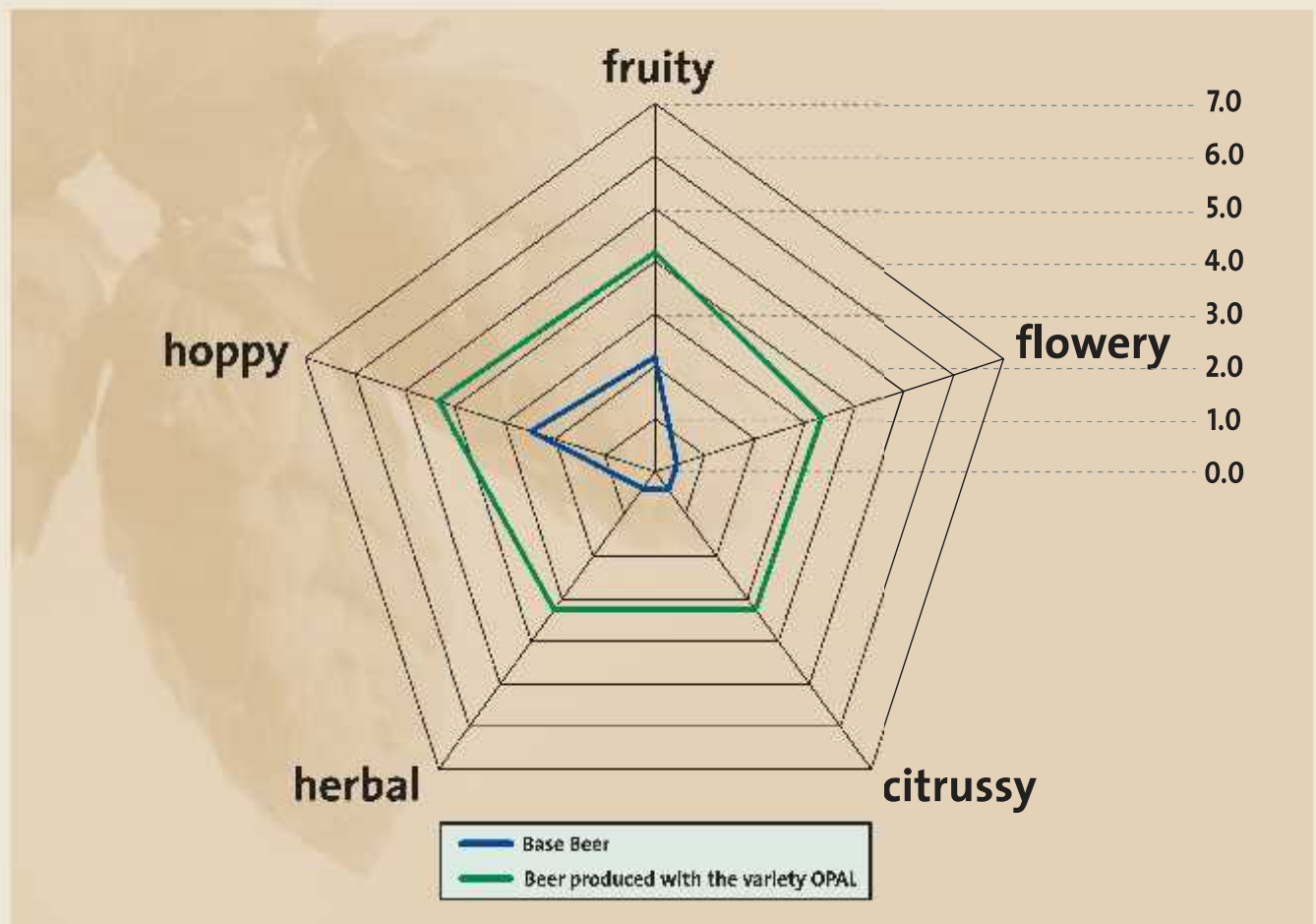
# Brewing trial: Opal

## 1. Beer Analysis

co-isohumulone	4.3 mg/l	iso-xanthohumol	0.47 mg/l
n-isohumulone	13.7 mg/l	xanthohumol	nd*
ad-isohumulone	2.5 mg/l	linalool	67 µg/l
∑ isohumulones	20.5 mg/l	total polyphenols	172 mg/l
bitterness	23 EBC-BU		

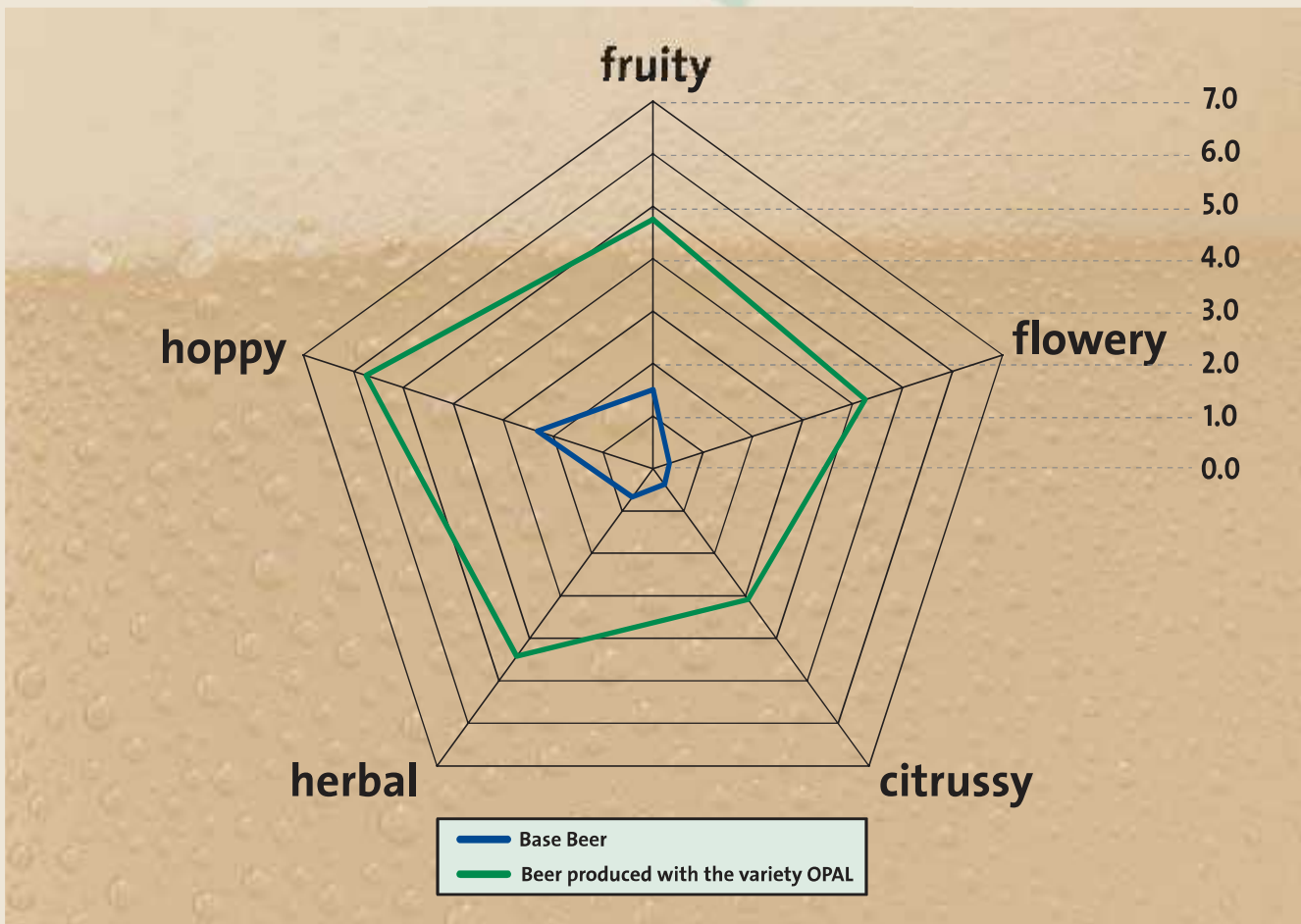
\*nd: not detectable

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

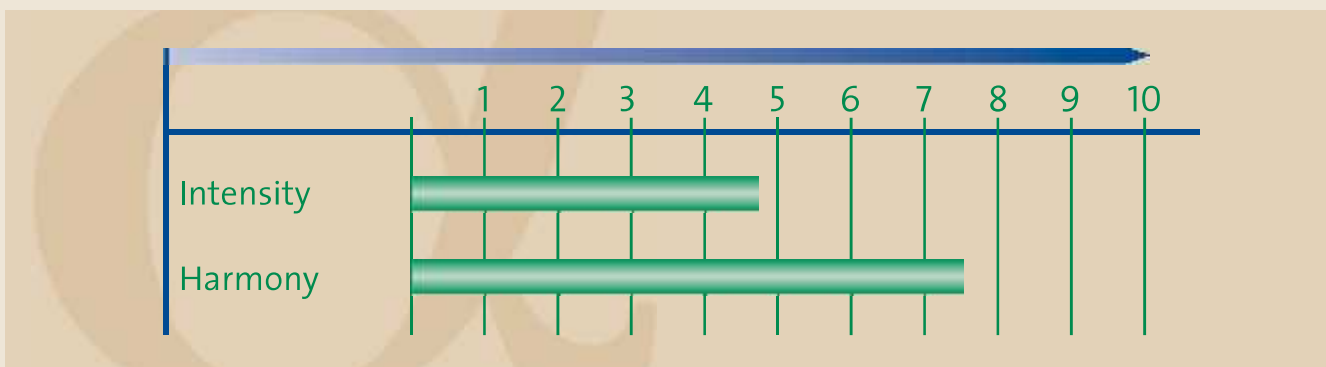




### 3. Sensory Evaluation “Hop Flavour” (Taste)



### 4. Sensory Evaluation of the Bitterness



The bitterness in the beer of the variety Opal is not too strong with a distinctive harmony. In smell there is an almost even dispersal of all aroma impressions, in the taste the citrusy flavour is a little weaker.