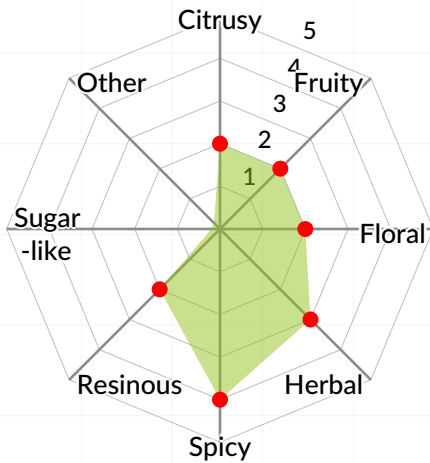


AROMA EVALUATION



VISUAL EVALUATION



AROMA SPECIFICATION

spicy, grassy, tea, slight citrusy

GENETIC ORIGIN

A landrace variety originating in Germany.

AGRONOMIC ASPECTS

GROWING

| | |
|----------------------|---------------|
| Yield (kg/ha) | 1,050 - 1,300 |
| Maturity | Early |
| Main Growing Country | Germany |
| Acreage (ha) | 723 |

RESISTANCE AGAINST DISEASES

| | |
|----------------|-------------|
| Wilt diseases | Susceptible |
| Downy mildew | Susceptible |
| Powdery mildew | Tolerant |
| Aphid | Susceptible |

CHEMICAL INGREDIENTS

BITTER COMPONENTS

| | |
|--------------------------|-------------|
| Alpha-Acid % | 3.0 - 5.5 |
| Beta-Acid % | 3.0 - 5.0 |
| Co-Humulone % rel. | 18 - 28 |
| Hard Resins : Alpha-Acid | 0.23 - 1.05 |

POLYPHENOLS

| | |
|-----------------------|-----------|
| Total Polyphenoles | 4.6 |
| Xanthohumol (EBC 7.7) | 0.2 - 0.3 |

AROMA COMPONENTS

| | |
|------------------------------|-------------|
| Total Oils (ml/100g) | 0.7 - 1.3 |
| Beta-Caryophyllene: Humulene | 0.29 - 0.30 |
| Farnesene % of total Oil | 0.00 - 1.00 |
| Linalool % of total Oil | 0.7 - 1.1 |
| Linalool: Alpha-Acid | 0.20 - 0.23 |

HOP ALTERNATIVES

BREWHOUSE

Hallertauer Tradition

DRY HOPPING

Saphir

HOPS HOTLINE

800.339.8710