

Alt

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **42**
- SRM **16.7**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **4 %**
- Size with trub loss **25 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29.6 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.6 liter(s)**
- Total mash volume **25.2 liter(s)**

Steps

- Temp **55 C**, Time **20 min**
- Temp **65 C**, Time **40 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **19.6 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **20 min** at **55C**
- Keep mash **40 min** at **65C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **15.6 liter(s)** of **76C** water or to achieve **29.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Malteurop Lager	4.5 kg (80.4%)	82 %	3
Grain	Weyermann Caramunich 3	1 kg (17.9%)	76 %	150
Grain	fawcett chocolate	0.1 kg (1.8%)	60 %	1200

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum szyszka	33 g	60 min	13.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM42 Stare Nadreńskie	Ale	Slant	200 ml	Fermentum Mobile

Notes

- Trzeba dać 40 g szyszki, bo program liczy jako granulat.
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