

Altbier

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **37**
- SRM **20.4**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **72 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.4 liter(s)**
- Total mash volume **23.2 liter(s)**

Steps

- Temp **52 C**, Time **15 min**
- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **17.4 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **45 min** at **62C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2.5 kg (43.1%)	80 %	5
Grain	Viking Pilsner malt	2 kg (34.5%)	82 %	4
Grain	Monachijski	0.6 kg (10.3%)	80 %	16
Grain	Strzegom Karmel 300	0.5 kg (8.6%)	70 %	299
Grain	Strzegom Czekoladowy ciemny	0.1 kg (1.7%)	68 %	1200
Grain	Strzegom Czekoladowy jasny	0.1 kg (1.7%)	68 %	400

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sybilla	80 g	70 min	3.5 %
Aroma (end of boil)	Polaris	20 g	5 min	19 %

Yeasts

Name	Type	Form	Amount	Laboratory
------	------	------	--------	------------

FM42 Stare Nadreńskie	Ale	Liquid	1000 ml	Fermentum Mobile
-----------------------	-----	--------	---------	------------------