

schwarzbier

- Gravity **9.3 BLG**
- ABV **3.6 %**
- IBU **18**
- SRM **14.9**
- Style **Schwarzbier**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **25.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.1 liter(s)**
- Total mash volume **14.8 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **75 C**, Time **10 min**

Mash step by step

- Heat up **11.1 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **10 min** at **75C**
- Sparge using **18.3 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Słód Pilsner® 2,5-4,5 EBC Weyermann	3.18 kg (85.9%)	80 %	4
Grain	Briess - Munich Malt 10L	0.34 kg (9.2%)	77 %	20
Grain	Weyermann - Dehusked Carafa III	0.14 kg (3.8%)	70 %	1024
Grain	Jęczmień palony	0.043 kg (1.2%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Tettnang	21 g	60 min	4 %
Boil	Tettnang	21 g	30 min	4 %
Whirlpool	Hallertau	45 g	0 min	4.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - Bavarian Lager	Lager	Slant	1000 ml	Wyeast Labs