

## Pierwszy porter

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **21**
- SRM **22.1**
- Style **Brown Porter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **25 liter(s)**

### Steps

- Temp **65 C**, Time **40 min**

### Mash step by step

- Heat up **20 liter(s)** of strike water to **70.6C**
- Add grains
- Keep mash **40 min** at **65C**
- Sparge using **10.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.5 kg (70%)	80 %	5
Grain	viking karmel	1 kg (20%)	75 %	150
Grain	Viking Czekoladowy jasny	0.5 kg (10%)	68 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sybilla	30 g	60 min	6.4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
us-04	Ale	Dry	11.5 g	---