

## 2.Warka

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **36**
- SRM **14.7**
- 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 **65 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

### Steps

- Temp **69 C**, Time **65 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **13.5 liter(s)** of strike water to **77.2C**
- Add grains
- Keep mash **65 min** at **69C**
- Keep mash **10 min** at **78C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.6 kg (80%)	85 %	7
Grain	Caraaroma	0.3 kg (6.7%)	78 %	350
Grain	Weyermann - Carafa I	0.1 kg (2.2%)	70 %	690
Grain	Platki owsiane	0.5 kg (11.1%)	85 %	3

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	English Golding	20 g	65 min	4.8 %
Boil	Sybilla	30 g	50 min	6.2 %
Aroma (end of boil)	English Golding	10 g	10 min	4.8 %
Aroma (end of boil)	Willamette	30 g	5 min	5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale