

## warka #9

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- Gravity **10.2 BLG**
- ABV **4.1 %**
- IBU **51**
- SRM **3.4**

### Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

### Steps

- Temp **52 C**, Time **15 min**
- Temp **65 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **30 min** at **65C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **21.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale/Pils Crisp	3.5 kg (70%)	--- %	5
Grain	Pszeniczny	1.5 kg (30%)	85 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	magnum	30 g	60 min	11.8 %
Boil	ht blanc	30 g	20 min	9.8 %
Aroma (end of boil)	lunga	15 g	0 min	11.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
gozdawa hybrid ale	Ale	Slant	100 ml	---
temperatura fermentacji poniżej/pod 20 celcjusza				