

## Warka #3

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- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **30**
- SRM **4.3**
- Style **American Wheat or Rye Beer**

### 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 **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

### Steps

- Temp **64 C**, Time **70 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **17.5 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **70 min** at **64C**
- Keep mash **10 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **12.8 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pszeniczny	2.5 kg (50%)	--- %	4
Grain	Weyermann - Pale Ale Malt	2.5 kg (50%)	85 %	7

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Centennial	15 g	60 min	8.9 %
Aroma (end of boil)	Citra	15 g	15 min	14.2 %
Aroma (end of boil)	Cascade PL	15 g	15 min	5.5 %
Dry Hop	Citra	35 g	3 day(s)	14.2 %
Dry Hop	Chinook	22 g	3 day(s)	12.8 %
Dry Hop	Cascade PL	10 g	3 day(s)	5.5 %
Dry Hop	Centennial	11 g	3 day(s)	8.9 %

### Yeasts

Name	Type	Form	Amount	Laboratory
us 05	Ale	Dry	11.5 g	Safale