

# warka15 duza

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- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **23**
- SRM **19.5**
- Style **American Stout**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.2 liter(s)**
- Total mash volume **22.9 liter(s)**

## Steps

- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **40 min**

## Mash step by step

- Heat up **17.2 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **40 min** at **72C**
- Sparge using **17.5 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	carmel malt crafta special 3	0.2 kg (3.5%)	75 %	1200
Grain	hook head series pilsner lager	4 kg (69.9%)	80 %	3.2
Grain	BESTMALZ - Bestt Pale Ale	0.65 kg (11.4%)	80.5 %	6
Grain	irish wheat malt	0.52 kg (9.1%)	75 %	4
Grain	roasted malt chocolate malt	0.1 kg (1.7%)	80 %	900
Grain	Oats, Malted	0.25 kg (4.4%)	80 %	2

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Saaz (USA)	50 g	40 min	3.75 %
Boil	Mosaic	14 g	15 min	11 %

## Yeasts

Name	Type	Form	Amount	Laboratory
sefale us -05	Lager	Slant	100 ml	---