

# Mała Czarna #4 - Irish Stout - Browar na Wyżynie

- Gravity **10 BLG**
- ABV **4 %**
- IBU **30**
- SRM **38.6**
- Style **Dry Stout**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **4 %**
- Size with trub loss **21.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **25.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **13.7 liter(s)**
- Total mash volume **17.6 liter(s)**

## Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **13.7 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.4 liter(s)** of **76C** water or to achieve **25.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	wiedeński Viking Malt	3 kg (76.9%)	79 %	9
Grain	Caffe Castle Malting	0.5 kg (12.8%)	75.5 %	500
Grain	Carafa® III Malt Weyermann®	0.2 kg (5.1%)	65 %	1400
Grain	pszeniczny czekoladowy Weyermann®	0.2 kg (5.1%)	65 %	1200

## Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	lunga (Polishhops) - granulat	20 g	100 min	10 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM12 W szkocką kratę	Ale	Slant	300 ml	Fermentum Mobile

## Extras

Type	Name	Amount	Use for	Time
Water Agent	chlorek wapnia	2 g	Mash	70 min
Water Agent	gips	3 g	Mash	70 min
Water Agent	kreda	15 g	Mash	70 min
Water Agent	Kwas fosforowy 75% (zacier)	7 g	Mash	70 min
Water Agent	Kwas fosforowy 75% (wysładzanie)	2 g	Mash	70 min
Fining	mech irlandzki	2 g	Boil	15 min

## Notes

- <https://www.brewersfriend.com/mash-chemistry-and-brewing-water-calculator/?id=0X0Y7LN>  
 Ca+2 Mg+2 Na+ Cl- SO4-2 HCO  
 140.0 0.0 131.0 49.1 96.7 285.724  
 SO42-/Cl- ratio: 2.0 Little Bitter  
 Mash pH \*: 5.44  
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