

# Czarna dziura

---

- Gravity **13.1 BLG**
- ABV ---
- IBU **26**
- SRM **53.7**
- Style **Dry Stout**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **21.4 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **16.6 liter(s)** of strike water to **74.9C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **5 min** at **76C**
- Sparge using **17.2 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4 kg (76.2%)	80 %	4
Grain	Jęczmień palony	0.25 kg (4.8%)	55 %	1100
Grain	Weyermann - Carafa II	0.15 kg (2.9%)	70 %	1100
Grain	Pszeniczny czekoladowy	0.35 kg (6.7%)	68 %	1000
Adjunct	płatki jęczmienne	0.5 kg (9.5%)	--- %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	15 g	50 min	10 %
Aroma (end of boil)	Marynka	15 g	20 min	10 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale