

# Gorzka czarna

- Gravity **14 BLG**
- ABV **5.8 %**
- IBU **43**
- SRM **23.6**
- Style **Black IPA**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.7 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **23.4 liter(s)**

## Steps

- Temp **66 C**, Time **60 min**

## Mash step by step

- Heat up **17.5 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Sparge using **16.1 liter(s)** of **76C** water or to achieve **27.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	5 kg (82%)	80.5 %	2
Grain	Karmelowy Jasny 30EBC	0.1 kg (1.6%)	75 %	30
Grain	Weyermann - Carafa II	0.5 kg (8.2%)	70 %	837
Grain	Biscuit Malt	0.25 kg (4.1%)	79 %	45
Sugar	sacharoza	0.25 kg (4.1%)	--- %	---

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Centennial	25 g	60 min	10.5 %
Boil	Cascade	25 g	45 min	6 %
Boil	Fuggles	25 g	15 min	4.5 %
Aroma (end of boil)	Cascade PL	25 g	0 min	5.2 %
Dry Hop	Cascade	50 g	---	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	100 ml	Fermentis