

# czarne żyto

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **49**
- SRM **15.5**

## Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **27.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **22.1 liter(s)**
- Total mash volume **28.4 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **22.1 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **10 min** at **76C**
- Sparge using **15.9 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	6 kg (95.2%)	80 %	5
Grain	żytni czekoladowy	0.2 kg (3.2%)	75 %	700
Grain	Pszeniczny Czeko	0.1 kg (1.6%)	73 %	1001

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	ctz	20 g	60 min	15 %
Aroma (end of boil)	Equinox	12 g	20 min	13.4 %
Aroma (end of boil)	Mosaic	10 g	20 min	10 %
Aroma (end of boil)	Amarillo	10 g	20 min	9.5 %
Aroma (end of boil)	Cascade	15 g	20 min	6 %
Whirlpool	Equinox	30 g	0 min	13.4 %
Dry Hop	Equinox	18 g	5 day(s)	13.4 %
Dry Hop	Mosaic	20 g	5 day(s)	10 %
Dry Hop	Amarillo	20 g	5 day(s)	9.5 %
Dry Hop	Cascade	15 g	5 day(s)	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
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Safale US-05	Ale	Dry	11.5 g	Fermentis
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