

# Biały czarnuch

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **14**
- SRM **10.7**
- Style **Dunkelweizen**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **15.8 liter(s)**
- Total mash volume **20.3 liter(s)**

## Steps

- Temp **45 C**, Time **15 min**
- Temp **55 C**, Time **15 min**
- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **40 min**
- Temp **75 C**, Time **5 min**

## Mash step by step

- Heat up **15.8 liter(s)** of strike water to **48.6C**
- Add grains
- Keep mash **15 min** at **45C**
- Keep mash **15 min** at **55C**
- Keep mash **40 min** at **62C**
- Keep mash **40 min** at **72C**
- Keep mash **5 min** at **75C**
- Sparge using **14 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pszeniczny	2.5 kg (55.6%)	85 %	4
Grain	Pilzneński	1.7 kg (37.8%)	81 %	4
Grain	Carabelge	0.2 kg (4.4%)	80 %	30
Grain	Fawcett - Pszeniczny Czekoladowy	0.1 kg (2.2%)	73 %	1001

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	10 g	70 min	10 %
Boil	Hallertau	15 g	5 min	4.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Danstar Munich Classic	Wheat	Dry	11 g	---