

# koźlak

- Gravity **20.2 BLG**
- ABV **8.9 %**
- IBU **21**
- SRM **18.3**
- Style **Doppelbock**

## Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **15.8 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **19.9 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **16.9 liter(s)**
- Total mash volume **23.6 liter(s)**

## Steps

- Temp **63 C**, Time **20 min**
- Temp **72 C**, Time **50 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **16.9 liter(s)** of strike water to **71.6C**
- Add grains
- Keep mash **20 min** at **63C**
- Keep mash **50 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **9.8 liter(s)** of **76C** water or to achieve **19.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Monachijski typ II	2 kg (29.6%)	79 %	22
Grain	Strzegom Wiedeński	4 kg (59.3%)	79 %	10
Grain	Weyermann - Melanoiden Malt	0.25 kg (3.7%)	81 %	70
Grain	Strzegom Czekoladowy jasny	0.1 kg (1.5%)	68 %	400
Grain	Viking Pale Ale malt	0.3 kg (4.4%)	80 %	5
Grain	Strzegom Karmel 600	0.1 kg (1.5%)	68 %	601

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Tradition	35 g	60 min	5.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M84 Bohemian Lager	Lager	Dry	11 g	Mangrove Jack's

## Extras

Type	Name	Amount	Use for	Time
Fining	mech	5 g	Boil	5 min