

## #72 koźlak

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- Gravity **17.7 BLG**
- ABV **7.6 %**
- IBU **23**
- SRM **13.7**
- Style **Traditional Bock**

### 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 **17 %/h**
- Boil size **28.5 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21.6 liter(s)**
- Total mash volume **28.8 liter(s)**

### Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **30 min**

### Mash step by step

- Heat up **21.6 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **30 min** at **76C**
- Sparge using **14.1 liter(s)** of **76C** water or to achieve **28.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	4 kg (55.6%)	80 %	16
Grain	Strzegom Wiedeński	2 kg (27.8%)	79 %	10
Grain	Strzegom Monachijski typ II	1 kg (13.9%)	79 %	22
Grain	Strzegom Czekoladowy jasny	0.2 kg (2.8%)	68 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Tradition	50 g	60 min	5.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Fermentum mobile 31	Lager	Slant	250 ml	Fermentum mobile