

## #150 Cosie stałosie?

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **13**
- SRM **3.3**
- Style **Kölsch**

### Batch size

- Expected quantity of finished beer **20.2 liter(s)**
- Trub loss **6 %**
- Size with trub loss **21.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **6 %/h**
- Boil size **22.9 liter(s)**

### Mash information

- Mash efficiency **79 %**
- Liquor-to-grist ratio **3.333 liter(s) / kg**
- Mash size **13 liter(s)**
- Total mash volume **16.9 liter(s)**

### Steps

- Temp **52 C**, Time **10 min**
- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **13 liter(s)** of strike water to **56.8C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **13.8 liter(s)** of **76C** water or to achieve **22.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Malt Pszeniczny	0.45 kg (11.5%)	81 %	6
Grain	Viking Malt Pilzneński	3.45 kg (88.5%)	80 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lubelski PL 2021 granulat	30 g	60 min	3 %
Aroma (end of boil)	Lubelski PL 2021 granulat	10 g	10 min	3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM52 Amerykański Sen	Ale	Slant	40 ml	Fermentum Mobile