

## #221 Koelsch

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- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **20**
- SRM **3.2**
- Style **Kölsch**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **6 %**
- Size with trub loss **23.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **6 %/h**
- Boil size **25.2 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.38 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18.2 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 **14 liter(s)** of strike water to **56.7C**
- 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 **15.4 liter(s)** of **76C** water or to achieve **25.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	VM pilzneński	3.65 kg (88%)	81 %	4
Grain	VM pszeniczny	0.5 kg (12%)	85 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lubelski PL 2023	35 g	60 min	4.3 %
Aroma (end of boil)	Lubelski PL 2022	15 g	10 min	4.3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM704 Lutra kveik	Ale	Liquid	40 ml	Fermentum Mobile