

## #4 Ciemne KOLSCH v.1

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **27**
- SRM **20.7**

### Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **10.2 liter(s)**
- Total mash volume **13.1 liter(s)**

### Steps

- Temp **67 C**, Time **90 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **10.2 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **90 min** at **67C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **7.9 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	2.5 kg (86.2%)	82 %	4
Grain	Fawcett - Pszeniczny Czekoladowy	0.15 kg (5.2%)	73 %	1001
Grain	Fawcett - Crystal	0.25 kg (8.6%)	70 %	160

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	10 g	60 min	10 %
Boil	Cascade PL	15 g	20 min	5.2 %
Boil	Cascade PL	10 g	0 min	5.2 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM21 Odkrycie sezonu	Ale	Slant	100 ml	Fermentum Mobile

### Extras

Type	Name	Amount	Use for	Time
------	------	--------	---------	------

Other	Cukier kandyzowany	100 g	Primary	9 day(s)
-------	--------------------	-------	---------	----------