

# Bitter Bitter

- Gravity **8.8 BLG**
- ABV **3.4 %**
- IBU **21**
- SRM **4.5**
- Style **Mild**

## Batch size

- Expected quantity of finished beer **9 liter(s)**
- Trub loss **5 %**
- Size with trub loss **9.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **11.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **3.6 liter(s)**
- Total mash volume **4.8 liter(s)**

## Steps

- Temp **66 C**, Time **70 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **3.6 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **70 min** at **66C**
- Keep mash **10 min** at **78C**
- Sparge using **8.9 liter(s)** of **76C** water or to achieve **11.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Simpsons - Maris Otter	1.1 kg (78.6%)	81 %	6
Grain	Simpsons - Imperial malt	0.05 kg (3.6%)	75 %	43
Grain	Simpsons - Caramel/Crystal Malt - 60L	0.05 kg (3.6%)	74 %	118
Sugar	Cane (Beet) Sugar	0.2 kg (14.3%)	100 %	0

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	30 g	30 min	3 %
Boil	Lublin (Lubelski)	30 g	1 min	3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM10 O czym szumią wierzby	Ale	Slant	100 ml	Fermentum Mobile

## Extras

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

Water Agent	gips	2.5 g	Mash	60 min
Water Agent	chlorek magnezu	3 g	Mash	60 min