#143 Bitter v.4

- Gravity **9.8 BLG**
- ABV **3.8 %**
- IBU **46**
- SRM **5.3**
- Style **Standard/Ordinary Bitter**

Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **4 %**
- Size with trub loss **25.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **30.6 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14.2 liter(s)**
- Total mash volume **18.2 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **14.2 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **20.5 liter(s)** of **76C** water or to achieve **30.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Malteurop Lager	3.3 kg *(81.5%)*	82 %	3
Grain	Strzegom Karmel 150	0.25 kg *(6.2%)*	75 %	150
Grain	Malteurop Wheat	0.3 kg *(7.4%)*	86.8 %	5
Grain	Weyermann - Carapils	0.2 kg *(4.9%)*	78 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	13.5 %
Boil	East Kent Goldings	80 g	10 min	6.3 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM11 Wichrowe Wzgórza	Ale	Liquid	50 ml	Fermentum Mobile