

# Urodzinowy bitterocoś

- Gravity **10.7 BLG**
- ABV **4.3 %**
- IBU **27**
- SRM **3**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **27.9 liter(s)**

## Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **7.2 liter(s) / kg**
- Mash size **29.2 liter(s)**
- Total mash volume **33.2 liter(s)**

## Steps

- Temp **67 C**, Time **90 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **29.2 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **90 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **2.8 liter(s)** of **76C** water or to achieve **27.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	3.8 kg (93.8%)	81 %	4
Grain	Castlemalting - Cara Clair	0.25 kg (6.2%)	78 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Northern Brewer	15 g	50 min	9.3 %
Boil	Northern Brewer	20 g	20 min	9.3 %
Boil	Northern Brewer	15 g	0 min	9.3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
London English-style (ESB)	Ale	Dry	11 g	Lallemand