

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 |