

schwarzbier

- Gravity **9.3 BLG**
- ABV **3.6 %**
- IBU **18**
- SRM **14.9**
- Style **Schwarzbier**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **25.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.1 liter(s)**
- Total mash volume **14.8 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **75 C**, Time **10 min**

Mash step by step

- Heat up **11.1 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **10 min** at **75C**
- Sparge using **18.3 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---|-----------------|-------|------|
| Grain | Słód Pilsner® 2,5-4,5 EBC Weyermann | 3.18 kg (85.9%) | 80 % | 4 |
| Grain | Briess - Munich Malt 10L | 0.34 kg (9.2%) | 77 % | 20 |
| Grain | Weyermann - Dehusked Carafa III | 0.14 kg (3.8%) | 70 % | 1024 |
| Grain | Jęczmień palony | 0.043 kg (1.2%) | 55 % | 985 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|-----------|--------|--------|------------|
| Boil | Tettnang | 21 g | 60 min | 4 % |
| Boil | Tettnang | 21 g | 30 min | 4 % |
| Whirlpool | Hallertau | 45 g | 0 min | 4.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------------|-------|-------|---------|-------------|
| Wyeast - Bavarian Lager | Lager | Slant | 1000 ml | Wyeast Labs |