

Schwarzbier

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **20**
- SRM **17.4**
- 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 **13.7 liter(s)**
- Total mash volume **18.2 liter(s)**

Steps

- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **13.7 liter(s)** of strike water to **70.1C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **16.6 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|----------------|-------|-----|
| Grain | Pilzneński | 2.5 kg (54.9%) | 81 % | 4 |
| Grain | Monachijski | 1.5 kg (33%) | 80 % | 16 |
| Grain | Czekoladowy | 0.25 kg (5.5%) | 60 % | 788 |
| Grain | Karmelowy Jasny 30EBC | 0.15 kg (3.3%) | 75 % | 30 |
| Grain | Karmelowy żytni Strzegom | 0.15 kg (3.3%) | 75 % | 150 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------|--------|--------|------------|
| Boil | Perle | 25 g | 60 min | 7 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------------------|-------|-------|--------|------------|
| Saflager W 34/70 | Lager | Slant | 250 ml | Fermentis |