

schwarz

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **20**
- SRM **18.7**
- Style **Schwarzbier**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.5 liter(s)**
- Total mash volume **22 liter(s)**

Steps

- Temp **65 C**, Time **3 min**
- Temp **72 C**, Time **50 min**

Mash step by step

- Heat up **16.5 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **3 min** at **65C**
- Keep mash **50 min** at **72C**
- Sparge using **18 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------|----------------|-------|-----|
| Grain | Monachijski | 2.7 kg (49.1%) | 80 % | 16 |
| Grain | Strzegom Wiedeński | 2 kg (36.4%) | 79 % | 10 |
| Grain | Weyermann - Caraamber | 0.4 kg (7.3%) | 75 % | 65 |
| Grain | Fawcett - Pale Chocolate | 0.4 kg (7.3%) | 71 % | 600 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|----------|--------|--------|------------|
| Boil | Marynka | 20 g | 60 min | 8.8 % |
| Boil | Tettnang | 10 g | 30 min | 3.8 % |
| Boil | Tettnang | 10 g | 5 min | 3.8 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-----------------------|-------|-------|--------|------------|
| Wyeast - munich lager | Lager | Slant | 250 ml | --- |