

# Schwarzbier piwowar

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **28**
- SRM **21.4**
- Style **Schwarzbier**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

## Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **17.5 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **12.8 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

| Type  | Name                             | Amount       | Yield | EBC |
|-------|----------------------------------|--------------|-------|-----|
| Grain | Pilzneński                       | 4.1 kg (82%) | 81 %  | 4   |
| Grain | Słód Caramunich Typ II Weyermann | 0.25 kg (5%) | 73 %  | 120 |
| Grain | Biscuit Malt                     | 0.25 kg (5%) | 79 %  | 45  |
| Grain | Carafa II                        | 0.25 kg (5%) | 70 %  | 812 |
| Grain | Fawcett - Pale Chocolate         | 0.15 kg (3%) | 71 %  | 600 |

## Hops

| Use for | Name                 | Amount | Time   | Alpha acid |
|---------|----------------------|--------|--------|------------|
| Boil    | Magnum               | 15 g   | 60 min | 12.2 %     |
| Boil    | Hallertau Mittelfruh | 35 g   | 15 min | 3 %        |
| Boil    | Hallertau Mittelfruh | 25 g   | 5 min  | 3 %        |

## Yeasts

| Name                        | Type  | Form   | Amount  | Laboratory |
|-----------------------------|-------|--------|---------|------------|
| WLP830 - German Lager Yeast | Lager | Liquid | 2000 ml | White Labs |