

# Czarny

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **23**
- SRM **23.8**
- Style **Schwarzbier**

## Batch size

- Expected quantity of finished beer **18.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.4 liter(s)**
- Boil time **70 min**
- Evaporation rate **12 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.1 liter(s)**
- Total mash volume **16.2 liter(s)**

## Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **12.1 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **17.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

| Type  | Name                             | Amount         | Yield | EBC  |
|-------|----------------------------------|----------------|-------|------|
| Grain | Strzegom Pilzneński              | 2.5 kg (61.7%) | 80 %  | 6    |
| Grain | Strzegom Monachijski typ II      | 1 kg (24.7%)   | 79 %  | 22   |
| Grain | Aromatic Malt                    | 0.3 kg (7.4%)  | 78 %  | 200  |
| Grain | Fawcett - Pszeniczny Czekoladowy | 0.25 kg (6.2%) | 73 %  | 1200 |

## Hops

| Use for | Name         | Amount | Time   | Alpha acid |
|---------|--------------|--------|--------|------------|
| Boil    | Brewers Gold | 30 g   | 60 min | 4.5 %      |
| Boil    | Tradition    | 25 g   | 15 min | 5.4 %      |

## Yeasts

| Name                 | Type  | Form   | Amount  | Laboratory       |
|----------------------|-------|--------|---------|------------------|
| FM31 Bawarska Dolina | Lager | Liquid | 1500 ml | Fermentum Mobile |

## Extras

| Type   | Name           | Amount | Use for | Time   |
|--------|----------------|--------|---------|--------|
| Fining | Mech irlandzki | 3 g    | Boil    | 15 min |