

roggen

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **17**
- SRM **7**
- Style **Roggenbier**

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 **8 %/h**
- Boil size **24.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **25 liter(s)**

Steps

- Temp **44 C**, Time **20 min**
- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **20 liter(s)** of strike water to **47C**
- Add grains
- Keep mash **20 min** at **44C**
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **9.4 liter(s)** of **76C** water or to achieve **24.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-------------------------------|---------------|-------|-----|
| Grain | Weyermann - żytni | 3 kg (60%) | 85 % | 7 |
| Grain | monachijski Typ I Viking Malt | 1 kg (20%) | 78 % | 18 |
| Grain | Caramunich® typ I | 0.25 kg (5%) | 73 % | 80 |
| Grain | pilzneński lager Malteurop | 0.75 kg (15%) | 80 % | 4 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------|--------|--------|------------|
| Boil | Tradition | 20 g | 60 min | 5.5 % |
| Boil | Tradition | 15 g | 15 min | 5.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------------------------|-------|-------|--------|-------------|
| FM41 Gwoździe i Banany | Wheat | Slant | 200 ml | po warce 70 |