

Wirkungstreffer

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **19**
- SRM **18.7**
- Style **Munich Dunkel**

Batch size

- Expected quantity of finished beer **13.5 liter(s)**
- Trub loss **0 %**
- Size with trub loss **13.5 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **17.8 liter(s)**

Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **17.2 liter(s)**

Steps

- Temp **64 C**, Time **20 min**
- Temp **70 C**, Time **45 min**

Mash step by step

- Heat up **12.9 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **20 min** at **64C**
- Keep mash **45 min** at **70C**
- Sparge using **9.2 liter(s)** of **76C** water or to achieve **17.8 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|-------|-----|
| Grain | Strzegom Monachijski typ I | 2 kg (46.5%) | 79 % | 16 |
| Grain | Strzegom Wiedeński | 1.5 kg (34.9%) | 79 % | 10 |
| Grain | Słód Caramunich Typ II Weyermann | 0.25 kg (5.8%) | 73 % | 120 |
| Grain | Weyermann - Melanoiden Malt | 0.2 kg (4.7%) | 81 % | 53 |
| Grain | Weyermann - Carafa I | 0.15 kg (3.5%) | 70 % | 690 |
| Grain | Płatki owsiane | 0.2 kg (4.7%) | 85 % | 3 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|----------|--------|--------|------------|
| Boil | Tettnang | 30 g | 60 min | 4 % |
| Boil | Tettnang | 10 g | 0 min | 4 % |

Extras

| Type | Name | Amount | Use for | Time |
|--------|----------------|--------|---------|--------|
| Fining | mech irlandzki | 10 g | Boil | 10 min |