

Trotyl

- Gravity **13.9 BLG**
- ABV ---
- IBU **94**
- SRM **38.4**
- Style **Black IPA**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **24.6 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.3 liter(s)**
- Total mash volume **24.8 liter(s)**

Steps

- Temp **52 C**, Time **15 min**
- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**

Mash step by step

- Heat up **19.3 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Sparge using **10.8 liter(s)** of **76C** water or to achieve **24.6 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------------------------|---------------|-------|-----|
| Grain | Strzegom Monachijski typ II | 3 kg (54.5%) | 79 % | 22 |
| Grain | Briess - Dark Chocolate Malt | 0.5 kg (9.1%) | 60 % | 827 |
| Grain | Briess - Midnight Wheat Malt | 2 kg (36.4%) | 80 % | 7 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------------------|--------|----------|------------|
| Boil | Magnum | 10 g | 60 min | 13.5 % |
| Boil | Challenger | 20 g | 30 min | 7 % |
| Boil | Cascade | 20 g | 20 min | 6 % |
| Boil | Amarillo | 20 g | 50 min | 9.5 % |
| Boil | Sybilla | 20 g | 10 min | 3.5 % |
| Boil | Marynka | 20 g | 40 min | 10 % |
| Dry Hop | Citra | 40 g | 7 day(s) | 12 % |
| Boil | Columbus/Tomahawk/Zeus | 10 g | 70 min | 15.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|-------------|-------------|---------------|-------------------|
| Safale US-05 | Ale | Dry | 11.5 g | Fermentis |