

czarne kopyto

- Gravity **20.2 BLG**
- ABV **8.9 %**
- IBU **37**
- SRM **45**
- Style **Baltic Porter**

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 liter(s) / kg**
- Mash size **25.5 liter(s)**
- Total mash volume **34 liter(s)**

Steps

- Temp **55 C**, Time **5 min**
- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **50 min**

Mash step by step

- Heat up **25.5 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **5 min** at **55C**
- Keep mash **30 min** at **64C**
- Keep mash **50 min** at **72C**
- Sparge using **8.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|---------------|-------|------|
| Grain | Strzegom Pilzneński | 2 kg (23.5%) | 80 % | 4 |
| Grain | Strzegom Wiedeński | 2 kg (23.5%) | 79 % | 10 |
| Grain | Strzegom Monachijski typ I | 3 kg (35.3%) | 79 % | 16 |
| Grain | Strzegom Karmel 600 | 0.5 kg (5.9%) | 68 % | 601 |
| Grain | Strzegom Karmel 30 | 0.5 kg (5.9%) | 75 % | 30 |
| Grain | Strzegom Barwiący | 0.5 kg (5.9%) | 68 % | 1300 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil | Marynka | 40 g | 60 min | 10 % |
| Boil | Lublin (Lubelski) | 30 g | 15 min | 4 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|---------------|-------|------|--------|------------------------------------|
| Saflager S-23 | Lager | Dry | 22 g | Fermentis Division of S.I.Lesaffre |