

czarne żyto

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **49**
- SRM **15.5**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **27.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **22.1 liter(s)**
- Total mash volume **28.4 liter(s)**

Steps

- Temp **64 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **22.1 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **10 min** at **76C**
- Sparge using **15.9 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------|---------------|-------|------|
| Grain | Viking Pale Ale malt | 6 kg (95.2%) | 80 % | 5 |
| Grain | żytni czekoladowy | 0.2 kg (3.2%) | 75 % | 700 |
| Grain | Pszeniczny Czeko | 0.1 kg (1.6%) | 73 % | 1001 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|----------|--------|----------|------------|
| Boil | ctz | 20 g | 60 min | 15 % |
| Aroma (end of boil) | Equinox | 12 g | 20 min | 13.4 % |
| Aroma (end of boil) | Mosaic | 10 g | 20 min | 10 % |
| Aroma (end of boil) | Amarillo | 10 g | 20 min | 9.5 % |
| Aroma (end of boil) | Cascade | 15 g | 20 min | 6 % |
| Whirlpool | Equinox | 30 g | 0 min | 13.4 % |
| Dry Hop | Equinox | 18 g | 5 day(s) | 13.4 % |
| Dry Hop | Mosaic | 20 g | 5 day(s) | 10 % |
| Dry Hop | Amarillo | 20 g | 5 day(s) | 9.5 % |
| Dry Hop | Cascade | 15 g | 5 day(s) | 6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

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|--------------|-----|-----|--------|-----------|
| Safale US-05 | Ale | Dry | 11.5 g | Fermentis |
|--------------|-----|-----|--------|-----------|