

black rye ipa

- Gravity **11.9 BLG**
- ABV ---
- IBU **32**
- SRM **46.6**
- Style **American Wheat or Rye Beer**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **19.2 liter(s)**

Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **28 C**, Time **1 min**

Mash step by step

- Heat up **14.4 liter(s)** of strike water to **29.3C**
- Add grains
- Keep mash **1 min** at **28C**
- Keep mash **60 min** at **66C**
- Keep mash **10 min** at **72C**
- Sparge using **18.2 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------------|---------------|-------|------|
| Grain | Pilzneński | 1 kg (20.8%) | 81 % | 4 |
| Grain | Żytni | 2 kg (41.7%) | 85 % | 8 |
| Grain | Jęczmień palony | 0.3 kg (6.3%) | 55 % | 985 |
| Grain | Strzegom Czekoladowy ciemny | 0.3 kg (6.3%) | 68 % | 1200 |
| Grain | Strzegom Wiedeński | 1 kg (20.8%) | 79 % | 10 |
| Grain | zakwaszajacy | 0.2 kg (4.2%) | 75 % | 7 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|--------------|--------|--------|------------|
| Boil | Brewers Gold | 20 g | 30 min | 4.5 % |
| Boil | Cascade | 30 g | 60 min | 6 % |
| Aroma (end of boil) | Cascade | 10 g | 10 min | 6 % |
| Aroma (end of boil) | Cascade | 10 g | 5 min | 6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------|------|------|--------|------------|
| us 05 | Ale | Dry | 11.5 g | --- |