

# Czorne

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **30**
- SRM **39.9**
- Style **Oatmeal Stout**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.5 liter(s)**
- Total mash volume **20.6 liter(s)**

## Steps

- Temp **67 C**, Time **60 min**

## Mash step by step

- Heat up **15.5 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **15.2 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

## Fermentables

| Type    | Name               | Amount          | Yield | EBC  |
|---------|--------------------|-----------------|-------|------|
| Grain   | Strzegom Pale Ale  | 4 kg (71.4%)    | 79 %  | 6    |
| Grain   | Caraaroma          | 0.65 kg (11.6%) | 78 %  | 400  |
| Grain   | Roasted Barley     | 0.25 kg (4.5%)  | 65 %  | 1100 |
| Grain   | Carafa III Special | 0.25 kg (4.5%)  | 70 %  | 1300 |
| Adjunct | płatki owsiane     | 0.45 kg (8%)    | --- % | 3.5  |

## Hops

| Use for             | Name                   | Amount | Time   | Alpha acid |
|---------------------|------------------------|--------|--------|------------|
| Boil                | Columbus/Tomahawk/Zeus | 10 g   | 60 min | 15.5 %     |
| Boil                | Glacier                | 15 g   | 60 min | 5.5 %      |
| Aroma (end of boil) | Glacier                | 15 g   | 15 min | 5.5 %      |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 11.5 g | Safale     |

## Notes

- jak wyjdzie nizszy ekstrakt, to mniej chmielu  
*Sep 7, 2017, 3:20 PM*