

FES z piwowara

- Gravity **17.5 BLG**
- ABV **7.5 %**
- IBU **49**
- SRM **35.5**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29.4 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **23.5 liter(s)**
- Total mash volume **31.4 liter(s)**

Steps

- Temp **65 C**, Time **70 min**
- Temp **75 C**, Time **15 min**

Mash step by step

- Heat up **23.5 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **70 min** at **65C**
- Keep mash **15 min** at **75C**
- Sparge using **13.8 liter(s)** of **76C** water or to achieve **29.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|----------------|--------|------|
| Grain | Viking Pale Ale malt | 5 kg (63.7%) | 80 % | 5 |
| Grain | Strzegom Monachijski typ I | 1 kg (12.7%) | 79 % | 16 |
| Grain | Castle Cafe | 0.3 kg (3.8%) | 75.5 % | 500 |
| Grain | Karmelowy Jasny 30EBC | 0.25 kg (3.2%) | 75 % | 30 |
| Grain | Jęczmień palony | 0.3 kg (3.8%) | 55 % | 985 |
| Grain | Strzegom Czekoladowy ciemny | 0.2 kg (2.5%) | 68 % | 1200 |
| Grain | Fawcett - Pale Chocolate | 0.2 kg (2.5%) | 71 % | 600 |
| Grain | Płatki owsiane | 0.6 kg (7.6%) | 85 % | 3 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil | lunga | 50 g | 60 min | 10 % |
| Boil | Magnum | 5 g | 60 min | 13.5 % |
| Boil | Lublin (Lubelski) | 43 g | 15 min | 3 % |

Yeasts

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