

FES piwowar

- Gravity **18.4 BLG**
- ABV ---
- IBU **56**
- SRM **41.4**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **29.5 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **23.9 liter(s)**
- Total mash volume **31.8 liter(s)**

Steps

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

Mash step by step

- Heat up **23.9 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **70 min** at **65C**
- Keep mash **15 min** at **75C**
- Sparge using **13.6 liter(s)** of **76C** water or to achieve **29.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|--------|------|
| Grain | Weyermann - Pale Ale Malt | 5 kg (62.9%) | 85 % | 7 |
| Grain | Strzegom Monachijski typ I | 1 kg (12.6%) | 79 % | 16 |
| Grain | płatki żytnie | 0.5 kg (6.3%) | 80 % | 4 |
| Grain | Viking Czekoladowy ciemny | 0.2 kg (2.5%) | 68 % | 1200 |
| Grain | Fawcett - Pszeniczny Czekoladowy | 0.2 kg (2.5%) | 73 % | 1001 |
| Grain | Jęczmień palony Weyermann | 0.3 kg (3.8%) | 55 % | 985 |
| Grain | Karmelowy Jasny 30EBC Viking | 0.25 kg (3.1%) | 75 % | 30 |
| Grain | Fawcett - Pale Chocolate | 0.2 kg (2.5%) | 71 % | 600 |
| Grain | Castle Cafe | 0.3 kg (3.8%) | 75.5 % | 480 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|---------------|--------|--------|------------|
| Boil | lunga szyszka | 35 g | 60 min | 11 % |

| | | | | |
|---------------------|-------------------|------|--------|------|
| Boil | lunga pellet | 25 g | 60 min | 11 % |
| Aroma (end of boil) | Lublin (Lubelski) | 30 g | 15 min | 5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------|------|-------|--------|------------|
| US-05 | Ale | Slant | 150 ml | Saflager |