

## FES piwowar

- Gravity **18.4 BLG**
- ABV **8 %**
- 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   |

## Notes

- Fermentacja 18C  
May 17, 2020, 7:26 AM