

FES #3

- Gravity **17.5 BLG**
- ABV **7.5 %**
- IBU **29**
- SRM **38.6**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **27.7 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **2.8 liter(s) / kg**
- Mash size **19.6 liter(s)**
- Total mash volume **26.6 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **72 C**, Time **15 min**

Mash step by step

- Heat up **19.6 liter(s)** of strike water to **76.6C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **72C**
- Sparge using **15.1 liter(s)** of **76C** water or to achieve **27.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|-------|------|
| Grain | Viking Pilsner malt | 5.5 kg (78.6%) | 82 % | 4 |
| Grain | Strzegom Czekoladowy jasny | 0.5 kg (7.1%) | 68 % | 400 |
| Grain | Weyermann Specjal W | 0.5 kg (7.1%) | 68 % | 300 |
| Grain | Fawcett - Pszeniczny Czekoladowy | 0.5 kg (7.1%) | 73 % | 1001 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil | Marynka | 50 g | 60 min | 6.8 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|------|-------|--------|------------|
| Safale US-05 | Ale | Slant | 400 ml | Fermentis |