

FES BITWA

- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **43**
- SRM **46.5**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **15.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.9 liter(s) / kg**
- Mash size **12.2 liter(s)**
- Total mash volume **16.4 liter(s)**

Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **12.2 liter(s)** of strike water to **71.6C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **7.9 liter(s)** of **76C** water or to achieve **15.9 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------------|----------------|--------|-----|
| Grain | Pilzneński | 1.5 kg (35.7%) | 81 % | 4 |
| Grain | Strzegom Monachijski typ I | 1.1 kg (26.2%) | 79 % | 16 |
| Grain | Płatki owsiane | 0.5 kg (11.9%) | 60 % | 3 |
| Grain | Fawcett - Crystal | 0.25 kg (6%) | 70 % | 160 |
| Grain | Special B Malt | 0.25 kg (6%) | 65.2 % | 315 |
| Grain | Weyermann - Dehusked Carafa II | 0.25 kg (6%) | 70 % | 837 |
| Grain | Castle Chocolat | 0.25 kg (6%) | 60 % | 827 |
| Grain | Jęczmień palony | 0.1 kg (2.4%) | 55 % | 985 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------------|--------|--------|------------|
| Boil | Northern Brewer | 30 g | 60 min | 9 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale | Dry | 6.6 g | Fermentis |