

FES #2

- Gravity **18.7 BLG**
- ABV **8.1 %**
- IBU **62**
- SRM **39.1**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.6 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **14.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.3 liter(s)**
- Total mash volume **16.4 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **0 min**

Mash step by step

- Heat up **12.3 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **0 min** at **76C**
- Sparge using **5.9 liter(s)** of **76C** water or to achieve **14.1 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-------------------------------------------|-----------------|-------|-----|
| Grain | Słód Pilsner® 2,5-4,5 EBC Weyermann | 2.35 kg (54.7%) | 80 % | 4 |
| Grain | Strzegom Pszeniczny | 0.4 kg (9.3%) | 81 % | 6 |
| Grain | Strzegom Monachijski typ I | 0.1 kg (2.3%) | 79 % | 16 |
| Grain | Caramunich® typ I | 0.1 kg (2.3%) | 73 % | 80 |
| Grain | Caraaroma | 0.25 kg (5.8%) | 78 % | 400 |
| Grain | Carafa | 0.15 kg (3.5%) | 70 % | 664 |
| Grain | Jęczmień palony | 0.25 kg (5.8%) | 55 % | 985 |
| Grain | płatki jęczmienne | 0.5 kg (11.6%) | 60 % | 4 |
| Sugar | CUKIER | 0.2 kg (4.7%) | --- % | --- |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil | Lublin (Lubelski) | 30 g | 55 min | 6.5 % |
| Boil | Challenger | 30 g | 15 min | 6.1 % |
| Boil | Citra | 25 g | 10 min | 12.4 % |

| | | | | |
|---------------------|------------|------|-------|-------|
| Aroma (end of boil) | Challenger | 20 g | 0 min | 6.1 % |
|---------------------|------------|------|-------|-------|

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 11.5 g | Fermentis |