

FES od Doris

- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **38**
- SRM **32**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.2 liter(s)**
- Total mash volume **25.6 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **75 C**, Time **5 min**

Mash step by step

- Heat up **19.2 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **75C**
- Sparge using **12.7 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------|----------------|-------|-----|
| Grain | Viking Pilsner malt | 5 kg (78.1%) | 82 % | 4 |
| Grain | Caraaroma | 0.5 kg (7.8%) | 78 % | 400 |
| Grain | Carafa | 0.25 kg (3.9%) | 70 % | 664 |
| Grain | Płatki jęczmienne | 0.4 kg (6.3%) | 80 % | 4 |
| Grain | Jęczmień palony | 0.25 kg (3.9%) | 55 % | 985 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------|--------|--------|------------|
| Boil | Magnum PL | 25 g | 55 min | 13.5 % |
| Boil | Fuggles | 50 g | 10 min | 3.5 % |

Yeasts

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