

## 13-tego w piątek (FES) v2

- Gravity **18.2 BLG**
- ABV **7.8 %**
- IBU **46**
- SRM **43.5**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **4 %**
- Size with trub loss **10.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **11 %/h**
- Boil size **12.7 liter(s)**

### Mash information

- Mash efficiency **78 %**
- Liquor-to-grist ratio **2.9 liter(s) / kg**
- Mash size **10.4 liter(s)**
- Total mash volume **14 liter(s)**

### Steps

- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **10.4 liter(s)** of strike water to **69.3C**
- Add grains
- Keep mash **15 min** at **62C**
- Keep mash **60 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **5.9 liter(s)** of **76C** water or to achieve **12.7 liter(s)** of wort

### Fermentables

| Type  | Name                        | Amount         | Yield | EBC |
|-------|-----------------------------|----------------|-------|-----|
| Grain | Viking Pale Ale malt        | 2 kg (55.6%)   | 80 %  | 6   |
| Grain | Strzegom Monachijski typ II | 0.7 kg (19.4%) | 79 %  | 22  |
| Grain | Caraaroma                   | 0.5 kg (13.9%) | 78 %  | 400 |
| Grain | Carafa                      | 0.4 kg (11.1%) | 70 %  | 664 |

### Hops

| Use for | Name    | Amount | Time   | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil    | Admiral | 15 g   | 60 min | 14.3 %     |
| Boil    | Fuggles | 20 g   | 15 min | 4.5 %      |

### Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 7 g    | ---        |

### Extras

| Type   | Name           | Amount | Use for | Time   |
|--------|----------------|--------|---------|--------|
| Fining | Mech Irlandzki | 5 g    | Boil    | 15 min |

|        |                            |      |           |           |
|--------|----------------------------|------|-----------|-----------|
| Flavor | wiórki beczki po bourbonie | 20 g | Secondary | 14 day(s) |
|--------|----------------------------|------|-----------|-----------|