

## 13-tego w piątek (FES)

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- Gravity **14 BLG**
- ABV ---
- IBU **50**
- SRM **45.1**
- 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 **12.8 liter(s)**

### Mash information

- Mash efficiency **62 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.4 liter(s)**
- Total mash volume **12.5 liter(s)**

### Steps

- Temp **63 C**, Time **25 min**
- Temp **73 C**, Time **35 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **9.4 liter(s)** of strike water to **70.1C**
- Add grains
- Keep mash **25 min** at **63C**
- Keep mash **35 min** at **73C**
- Keep mash **10 min** at **78C**
- Sparge using **6.5 liter(s)** of **76C** water or to achieve **12.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2.5 kg (80%)	80 %	6
Grain	Strzegom Monachijski typ II	0.25 kg (8%)	79 %	20
Grain	Strzegom Czekoladowy 400	0.25 kg (8%)	68 %	400
Grain	Weyermann - Carafa III	0.125 kg (4%)	70 %	1400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sybilla	30 g	50 min	6 %
Boil	Sybilla	20 g	10 min	6 %

### Yeasts

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