

## FES #21

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- Gravity **16.8 BLG**
- ABV ---
- IBU **56**
- SRM **62.7**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.9 liter(s)**
- Total mash volume **26.5 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **19.9 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **14.5 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	2.3 kg (34.7%)	79 %	6
Grain	Strzegom Monachijski typ I	2 kg (30.2%)	79 %	16
Grain	Fawcett - Brown	0.35 kg (5.3%)	72 %	180
Grain	Carafa I Special	0.35 kg (5.3%)	70 %	812
Grain	Castle Cafe	0.35 kg (5.3%)	75.5 %	480
Grain	Jęczmień palony	0.2 kg (3%)	55 %	985
Grain	Strzegom Czekoladowy ciemny	0.17 kg (2.6%)	68 %	1200
Grain	Płatki owsiane	0.35 kg (5.3%)	85 %	3
Grain	Płatki pszeniczne	0.3 kg (4.5%)	85 %	3
Grain	Strzegom Karmel 150	0.12 kg (1.8%)	75 %	150
Grain	Strzegom Karmel 600	0.13 kg (2%)	68 %	601

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	14.6 %
Boil	Simcoe	25 g	15 min	13.1 %