

## FES 20

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- Gravity **20.2 BLG**
- ABV ---
- IBU **36**
- SRM **66.5**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **15 %**
- Size with trub loss **11.5 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **14.4 liter(s)**

### Mash information

- Mash efficiency **69 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.5 liter(s)**
- Total mash volume **16.6 liter(s)**

### Steps

- Temp **67 C**, Time **45 min**
- Temp **72 C**, Time **25 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **12.5 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **45 min** at **67C**
- Keep mash **25 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **6.1 liter(s)** of **76C** water or to achieve **14.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	BESTMALZ - Bestt Pale Ale	2 kg (44.9%)	80.5 %	6
Grain	Strzegom Monachijski typ II	1 kg (22.5%)	79 %	22
Grain	Strzegom Karmel 30	0.35 kg (7.9%)	75 %	30
Grain	Fawcett - Dark Crystal	0.2 kg (4.5%)	71 %	300
Grain	Caraaroma	0.2 kg (4.5%)	78 %	400
Grain	Weyermann - Dehusked Carafa I	0.2 kg (4.5%)	70 %	690
Grain	Strzegom Czekoladowy ciemny	0.2 kg (4.5%)	68 %	1200
Liquid Extract	Miód Gryczany (Buckwheat Honey)	0.3 kg (6.7%)	70 %	40

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Target	20 g	70 min	10.5 %

### Yeasts

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
Safale S-04	Ale	Dry	11 g	Safale