

# FES #1 - Browar na Wyżynie

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **31**
- SRM **40.4**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **16 liter(s)**
- Trub loss **6 %**
- Size with trub loss **17 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **19.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.1 liter(s)**
- Total mash volume **22.8 liter(s)**

## Steps

- Temp **69 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **17.1 liter(s)** of strike water to **77.2C**
- Add grains
- Keep mash **45 min** at **69C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **19.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	pale ale Viking Malt	4.5 kg (78.9%)	79 %	8
Grain	jęczmień prażony Viking Malt	0.3 kg (5.3%)	1 %	1000
Grain	czekoladowy ciemny Viking Malt	0.3 kg (5.3%)	1 %	1200
Grain	płatki żytnie	0.6 kg (10.5%)	50 %	1

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka (PL) - granulát	25 g	60 min	8.2 %
Boil	Lubelski (PL) - granulát	20 g	15 min	4 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	500 ml	---