Świąteczny FES

- Gravity **16.8 BLG**
- ABV **7.1 %**
- IBU **---**
- SRM **35.3**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **21.8 liter(s)**
- Total mash volume **30.4 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **72 C**, Time **10 min**

Mash step by step

- Heat up **21.8 liter(s)** of strike water to **74C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **10 min** at **72C**
- Sparge using **15.9 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5.25 kg *(60.3%)*	80 %	5
Grain	Strzegom Monachijski typ II	0.5 kg *(5.7%)*	79 %	22
Grain	Strzegom Karmel 30	0.75 kg *(8.6%)*	75 %	30
Grain	Strzegom Wiedeński	1 kg *(11.5%)*	79 %	10
Grain	Strzegom Czekoladowy ciemny	0.15 kg *(1.7%)*	68 %	1200
Grain	Płatki owsiane	0.6 kg *(6.9%)*	60 %	3
Grain	Strzegom Barwiący	0.45 kg *(5.2%)*	68 %	1300

Hops

Use for	Name	Amount	Time	Alpha acid
Mash	Lublin (Lubelski)	60 g	60 min	4 %
Mash	Marynka	30 g	10 min	10 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Fermentis

Extras

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Type	Name	Amount	Use for	Time
Water Agent	gips	4 g	Mash	30 min
Fining	whirlfloc	0.5 g	Boil	50 min
Spice	goździki	5 g	Boil	50 min
Spice	cukier waniliowy	15 g	Boil	50 min
Spice	gałka muszkatałowa	10 g	Boil	50 min
Spice	skórka z pomarańczy	140 g	Boil	50 min