

# Christmas FES

- Gravity **17.1 BLG**
- ABV **7.3 %**
- IBU **24**
- SRM **39.4**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18.2 liter(s)**

## Steps

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

## Mash step by step

- Heat up **14 liter(s)** of strike water to **74.1C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **5.4 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	1 kg (23.6%)	80 %	4
Grain	Viking Pale Ale malt	1.6 kg (37.8%)	80 %	5
Grain	Płatki owsiane	0.2 kg (4.7%)	85 %	3
Grain	Carafa II	0.1 kg (2.4%)	70 %	812
Grain	Carafa III	0.1 kg (2.4%)	70 %	1034
Grain	Fawcett - Pszeniczny Czekoladowy	0.15 kg (3.5%)	73 %	1001
Grain	żytni czekoladowy	0.08 kg (1.9%)	55 %	985
Grain	Bestmalz Red X	0.4 kg (9.5%)	79 %	30
Grain	Strzegom Czekoladowy jasny	0.1 kg (2.4%)	68 %	400
Grain	Karmelowy Jasny 30EBC	0.1 kg (2.4%)	75 %	30
Grain	Fawcett - Dark Crystal	0.1 kg (2.4%)	71 %	300
Grain	Strzegom Monachijski typ I	0.3 kg (7.1%)	79 %	16

## Hops

Use for	Name	Amount	Time	Alpha acid
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Boil	Simcoe	12 g	60 min	13.2 %
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### Yeasts

Name	Type	Form	Amount	Laboratory
FM53 Voss kveik	Ale	Liquid	800 ml	FM

### Extras

Type	Name	Amount	Use for	Time
Spice	Skórka pomarańczy	16 g	Boil	10 min
Spice	Imbir	24 g	Boil	10 min
Spice	Cynamon	16 g	Boil	10 min
Spice	Miód	8 g	Boil	10 min
Flavor	Laktoza	150 g	Boil	10 min
Spice	Goździki	10 g	Boil	10 min