

Żyto

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **42**
- SRM **31.1**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **26 liter(s)**
- Trub loss **5 %**
- Size with trub loss **27.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **32.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **20.4 liter(s)**
- Total mash volume **27.2 liter(s)**

Steps

- Temp **52 C**, Time **10 min**
- Temp **67 C**, Time **60 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **20.4 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **60 min** at **67C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **19.3 liter(s)** of **76C** water or to achieve **32.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	2 kg (29.5%)	85 %	8
Grain	Viking Pale Ale malt	2.5 kg (36.8%)	80 %	5
Grain	Pszeniczny	0.5 kg (7.4%)	85 %	4
Grain	Caraaroma	0.3 kg (4.4%)	78 %	350
Grain	Strzegom Karmel 150	0.1 kg (1.5%)	75 %	150
Grain	Strzegom Czekoladowy jasny	0.15 kg (2.2%)	68 %	400
Grain	Jęczmień palony	0.25 kg (3.7%)	55 %	1000
Grain	Carafa III	0.19 kg (2.8%)	70 %	1034
Grain	Carafa	0.2 kg (2.9%)	70 %	664
Grain	Barley, Flaked	0.4 kg (5.9%)	70 %	4
Grain	Płatki żytnie	0.2 kg (2.9%)	80 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Pionieer	23 g	60 min	9.5 %

Boil	Endeavour	15 g	60 min	7.5 %
Boil	Endeavour	20 g	25 min	7.5 %
Boil	East Kent Goldings	10 g	25 min	4.5 %
Boil	Endeavour	15 g	5 min	7.5 %
Boil	East Kent Goldings	15 g	5 min	5.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale