

## 48. Żytni stout

- Gravity **18 BLG**
- ABV **7.7 %**
- IBU **48**
- SRM **38**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **13.2 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.6 liter(s)**
- Total mash volume **16.2 liter(s)**

### Steps

- Temp **40 C**, Time **15 min**
- Temp **62 C**, Time **60 min**
- Temp **78 C**, Time **2 min**

### Mash step by step

- Heat up **12.6 liter(s)** of strike water to **42.9C**
- Add grains
- Keep mash **15 min** at **40C**
- Keep mash **60 min** at **62C**
- Keep mash **2 min** at **78C**
- Sparge using **4.2 liter(s)** of **76C** water or to achieve **13.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	1.25 kg (34.7%)	80 %	5
Grain	Żytni	1.8 kg (50%)	85 %	8
Grain	Special B Malt	0.2 kg (5.6%)	65.2 %	315
Grain	Weyermann - Dehusked Carafo III	0.1 kg (2.8%)	70 %	1024
Grain	Chocolate Malt (UK)	0.25 kg (6.9%)	73 %	887

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum własna szyszka 2017, 1/3 więcej niż granulatu.	20 g	60 min	13.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
WLP Burlington-	Ale	Slant	70 ml	---

### Extras

Type	Name	Amount	Use for	Time
------	------	--------	---------	------

Flavor	Kakao	20 g	Boil	5 min
--------	-------	------	------	-------