

## stout żytni

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **45**
- SRM **46**
- Style **American Stout**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **18.4 liter(s)**
- Total mash volume **25.7 liter(s)**

### Steps

- Temp **67 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **18.4 liter(s)** of strike water to **76.4C**
- Add grains
- Keep mash **40 min** at **67C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **16.8 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Colorado pale base	3 kg (40.8%)	80 %	5
Grain	Żytni	2 kg (27.2%)	85 %	8
Grain	Wędzony bukiem Viking Malt	1 kg (13.6%)	82 %	10
Grain	Czekoladowy żytni	0.2 kg (2.7%)	60 %	600
Grain	Słód barwiący obłuszczone Viking Malt	0.6 kg (8.2%)	10 %	1034
Grain	Karmelowy Pszeniczny Strzegom	0.2 kg (2.7%)	79 %	130
Grain	Caraaroma	0.05 kg (0.7%)	78 %	400
Grain	Strzegom Czekoladowy ciemny	0.3 kg (4.1%)	68 %	1200

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Nugget	30 g	60 min	15.3 %
Aroma (end of boil)	Cascade PL	25 g	10 min	5.2 %
Dry Hop	Cascade PL	10 g	3 day(s)	5.2 %

## Yeasts

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