

## 32. Żytnie ciemne

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- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **28**
- SRM **13**
- Style **American Wheat or Rye Beer**

### Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **10 %**
- Size with trub loss **12.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **14.5 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.2 liter(s)**
- Total mash volume **12.3 liter(s)**

### Steps

- Temp **55 C**, Time **15 min**
- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **40 min**

### Mash step by step

- Heat up **9.2 liter(s)** of strike water to **60.9C**
- Add grains
- Keep mash **15 min** at **55C**
- Keep mash **40 min** at **62C**
- Keep mash **40 min** at **72C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **14.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	1.5 kg (48.7%)	80 %	5
Grain	Rye, Flaked	0.73 kg (23.7%)	78.3 %	4
Grain	Monachijski	0.6 kg (19.5%)	80 %	16
Grain	Carahell	0.12 kg (3.9%)	77 %	26
Grain	Caraaroma	0.1 kg (3.2%)	78 %	400
Grain	Carafa III	0.03 kg (1%)	70 %	1034

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Tradition	22 g	60 min	6 %
Boil	Tradition	9 g	10 min	5.5 %