

## żytnie ciemne

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- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **21**
- SRM **23.9**
- Style **Roggenbier**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **30 min**
- Evaporation rate **10 %/h**
- Boil size **24.1 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **12.5 liter(s)**
- Total mash volume **17.5 liter(s)**

### Steps

- Temp **68 C**, Time **90 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **12.5 liter(s)** of strike water to **77.6C**
- Add grains
- Keep mash **90 min** at **68C**
- Keep mash **10 min** at **78C**
- Sparge using **16.6 liter(s)** of **76C** water or to achieve **24.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Monachijski typ I	2 kg (40%)	79 %	16
Grain	Karmelowy żytni Strzegom	0.5 kg (10%)	75 %	130
Grain	czekoladowy żytni Strzegom	0.5 kg (10%)	75 %	600
Grain	Żytni	2 kg (40%)	85 %	8

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Spalt Select	30 g	30 min	4.7 %
Boil	Hallertau Spalt Select	30 g	20 min	4.7 %