

## 2. Rogal (Bawarskie żytnie)

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **18**
- SRM **16.2**
- Style **Roggenbier**

### Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **16.6 liter(s)**

### Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **16.6 liter(s)**

### Steps

- Temp **44 C**, Time **10 min**
- Temp **54 C**, Time **10 min**
- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **12.9 liter(s)** of strike water to **47.4C**
- Add grains
- Keep mash **10 min** at **44C**
- Keep mash **10 min** at **54C**
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **7.4 liter(s)** of **76C** water or to achieve **16.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	1.5 kg (40.5%)	85 %	7
Grain	Strzegom Pilzneński	1 kg (27%)	80 %	4
Grain	Strzegom Monachijski typ I	0.5 kg (13.5%)	79 %	16
Grain	Strzegom Karmel 300	0.4 kg (10.8%)	70 %	299
Grain	Płatki orkiszowe	0.3 kg (8.1%)	60 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Perle	10 g	60 min	7 %
Aroma (end of boil)	Perle	10 g	15 min	7 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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Lalbrew Munich Classic	Ale	Dry	11 g	Lallemand
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