

# Roggen

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **14**
- SRM **12.8**
- Style **Roggenbier**

## Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **20 %/h**
- Boil size **13.2 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **10.4 liter(s)**
- Total mash volume **13 liter(s)**

## Steps

- Temp **72 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **10.4 liter(s)** of strike water to **78.5C**
- Add grains
- Keep mash **60 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **5.4 liter(s)** of **76C** water or to achieve **13.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	1 kg (38.5%)	85 %	8
Grain	Pszeniczny	1 kg (38.5%)	85 %	4
Grain	Special B Malt	0.2 kg (7.7%)	65.2 %	315
Grain	Rye, Flaked	0.4 kg (15.4%)	78.3 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hallertau Mittelfruh'19	13.4 g	60 min	4.7 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM41 Gwoździe i Banany	Wheat	Slant	100 ml	Fermentum Mobile

## Extras

Type	Name	Amount	Use for	Time
Water Agent	Łuska ryżowa	100 g	Mash	60 min

## Notes

- Kwas mlekowy do wyśładzania - 2ml/12l  
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