

# GROGRA

- Gravity **10 BLG**
- ABV ---
- IBU **29**
- SRM **2.7**
- Style **Grodziskie/Graetzer**

## 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 **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

## Steps

- Temp **38 C**, Time **35 min**
- Temp **52 C**, Time **40 min**
- Temp **63 C**, Time **20 min**
- Temp **70 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **12 liter(s)** of strike water to **41C**
- Add grains
- Keep mash **35 min** at **38C**
- Keep mash **40 min** at **52C**
- Keep mash **20 min** at **63C**
- Keep mash **20 min** at **70C**
- Keep mash **10 min** at **78C**
- Sparge using **19.8 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Grodziski pszeniczny wędzony dębem	4 kg (100%)	80 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Marynka	25 g	10 min	8.8 %
Boil	Sybilla	30 g	40 min	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM51 Grodzie Dębowe	Wheat	Liquid	200 ml	Fermentum Mobile