

# gro

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- Gravity **10 BLG**
- ABV **4 %**
- IBU **21**
- SRM **5.2**
- Style **Grodziskie/Graetzer**

## Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

## Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **15 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **1 min** at **78C**
- Sparge using **21.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

## Fermentables

| Type  | Name                               | Amount      | Yield | EBC |
|-------|------------------------------------|-------------|-------|-----|
| Grain | Grodziski pszeniczny wędzony dębem | 5 kg (100%) | 80 %  | 10  |

## Hops

| Use for             | Name     | Amount | Time   | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil                | Zula     | 30 g   | 20 min | 9.7 %      |
| Aroma (end of boil) | Izabella | 30 g   | 5 min  | 6.8 %      |

## Yeasts

| Name         | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safbrew S-33 | Ale  | Dry  | 11.5 g | ---        |

## Extras

| Type   | Name        | Amount | Use for   | Time      |
|--------|-------------|--------|-----------|-----------|
| Flavor | sok z pigwy | 2000 g | Secondary | 21 day(s) |