

# Goryczk porażki

- Gravity **15 BLG**
- ABV **6.2 %**
- IBU **72**
- SRM **5.9**
- Style **American IPA**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **28.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.5 liter(s)**
- Total mash volume **26 liter(s)**

## Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **2 min**

## Mash step by step

- Heat up **19.5 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **2 min** at **78C**
- Sparge using **15.2 liter(s)** of **76C** water or to achieve **28.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.5 kg (69.2%)	80 %	5
Grain	Pszeniczny	0.5 kg (7.7%)	85 %	4
Grain	Biscuit Malt	0.5 kg (7.7%)	79 %	45
Grain	Płatki owsiane	1 kg (15.4%)	85 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	15.5 %
Boil	Citra	20 g	15 min	12 %
Boil	Simcoe	20 g	15 min	13.2 %
Aroma (end of boil)	Citra	15 g	5 min	12 %
Aroma (end of boil)	Simcoe	15 g	5 min	13.2 %
Aroma (end of boil)	Citra	15 g	0 min	12 %
Aroma (end of boil)	Simcoe	15 g	0 min	13.2 %

## Yeasts

Name	Type	Form	Amount	Laboratory
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Safale US-05	Ale	Dry	22 g	Fermentis
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