

# Pale Ale żytni

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **21**
- SRM **8.6**

## Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **5 %**
- Size with trub loss **25.4 liter(s)**
- Boil time **75 min**
- Evaporation rate **5 %/h**
- Boil size **28.3 liter(s)**

## Mash information

- Mash efficiency **83 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.5 liter(s)**
- Total mash volume **20.6 liter(s)**

## Steps

- Temp **62 C**, Time **30 min**
- Temp **68 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **15.5 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **30 min** at **62C**
- Keep mash **30 min** at **68C**
- Keep mash **10 min** at **78C**
- Sparge using **18 liter(s)** of **76C** water or to achieve **28.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4 kg (77.7%)	80 %	5
Grain	Rye Malt	0.5 kg (9.7%)	63 %	10
Grain	Strzegom Karmel 300	0.25 kg (4.9%)	70 %	299
Grain	Płatki owsiane	0.4 kg (7.8%)	85 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Dry Hop	Summit	50 g	5 day(s)	17 %
Boil	Cascade PL	30 g	60 min	5.2 %
Aroma (end of boil)	Cascade PL	35 g	10 min	5.2 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale