

# Groszkowe #12 (Zula) - Browar na Wyżynie

- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **37**
- SRM **9.1**
- Style **Special/Best/Premium Bitter**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **4 %**
- Size with trub loss **23.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **26.8 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.2 liter(s)**
- Total mash volume **17.6 liter(s)**

## Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **13.2 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **18 liter(s)** of **76C** water or to achieve **26.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	pale ale Viking Malt	3 kg (68.2%)	80 %	6
Grain	Crystal® Castle Malting	0.5 kg (11.4%)	78 %	150
Grain	pszeniczny Castle Malting	0.5 kg (11.4%)	83 %	5
Grain	płatki owsiane błyskawiczne	0.4 kg (9.1%)	70 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Zula (Polishhops) - granulát	30 g	100 min	6.9 %
Boil	Zula (Polishhops) - granulát	20 g	20 min	6.9 %
Whirlpool	Zula (Polishhops) - granulát	50 g	0 min	6.9 %
Dry Hop	Zula (Polishhops) - granulát	100 g	3 day(s)	6.9 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM11 Wichrowe Wzgórza	Ale	Liquid	1000 ml	Fermentum Mobile

### Extras

Type	Name	Amount	Use for	Time
Water Agent	siarczan wapnia	5 g	Mash	60 min
Water Agent	chlerek wapnia	5 g	Mash	60 min
Water Agent	kwas fosforowy 75% zacier	5 g	Mash	60 min
Water Agent	kwas fosforowy 75% wysładzanie	2 g	Mash	60 min
Water Agent	mech irlandzki	2 g	Boil	15 min
Other	siarczan cynku	2 g	Boil	0 min