

## zandka pear

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- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **29**
- SRM **8.2**
- Style **Grodziskie/Graetzer**

### Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **1 %**
- Size with trub loss **25.5 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 **16.5 liter(s)**
- Total mash volume **22 liter(s)**

### Steps

- Temp **63 C**, Time **22 min**
- Temp **73 C**, Time **35 min**

### Mash step by step

- Heat up **16.5 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **22 min** at **63C**
- Keep mash **35 min** at **73C**
- Sparge using **20.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	wędzony gruszą viking malt	3 kg (52.6%)	80 %	10
Grain	Żytni	1 kg (17.5%)	85 %	8
Grain	Słód Caramunich Typ II Weyermann	0.5 kg (8.8%)	73 %	120
Grain	Viking Pale Ale malt	1 kg (17.5%)	80 %	5
Adjunct	Rice Hulls	0.2 kg (3.5%)	1 %	0

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	citra	15 g	60 min	12 %
Boil	Citra	15 g	30 min	12 %
Aroma (end of boil)	citra	15 g	0 min	12 %

### Yeasts

Name	Type	Form	Amount	Laboratory
gęstwa us-05	Ale	Slant	100 ml	robot