

## 8\*Bitter

- Gravity **8 BLG**
- ABV **3.1 %**
- IBU **29**
- SRM **12.9**
- Style **Standard/Ordinary Bitter**

### Batch size

- Expected quantity of finished beer **26 liter(s)**
- Trub loss **5 %**
- Size with trub loss **27.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **32.9 liter(s)**

### Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **4.5 liter(s) / kg**
- Mash size **16 liter(s)**
- Total mash volume **19.5 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **16 liter(s)** of strike water to **72.2C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **76C**
- Sparge using **20.5 liter(s)** of **76C** water or to achieve **32.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	1.6 kg (45.1%)	80 %	5
Grain	Strzegom Monachijski typ II	1.5 kg (42.3%)	79 %	22
Grain	Caramel/Crystal Malt - 120L	0.4 kg (11.3%)	72 %	270
Grain	Briess - Black Malt	0.05 kg (1.4%)	55 %	1350

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	10 g	60 min	12.9 %
Boil	lunga	15 g	30 min	12.9 %
Boil	lunga	15 g	1 min	12.9 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM11 Wichrowe Wzgórza	Ale	Slant	100 ml	Fermentum Mobile

### Extras

Type	Name	Amount	Use for	Time
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Water Agent	kwas fosforowy	5 g	Mash	60 min
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## Notes

- Warka zostanie podzielona na dwie części. Połowa zostanie niechmielona na zimno X g chmielu Puławski/Oktawia.  
*May 15, 2018, 3:19 PM*