

polskie ale z pk + lacto +pł owsiane +1kg pale 2.0

- Gravity **18 BLG**
- ABV **7.7 %**
- IBU **33**
- SRM **6.9**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **26.6 liter(s)**

Steps

- Temp **62 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **20 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **60 min** at **62C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **14.5 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	4.2 kg (58.7%)	82 %	4
Grain	Weyermann - Pale Ale Malt	1 kg (14%)	85 %	7
Grain	Strzegom Karmel 150	0.25 kg (3.5%)	75 %	150
Grain	Płatki owsiane	1.2 kg (16.8%)	85 %	3
Sugar	Milk Sugar (Lactose)	0.5 kg (7%)	76.1 %	0

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Boil	Lublin (Lubelski)	15 g	10 min	4 %
Aroma (end of boil)	Lublin (Lubelski)	20 g	5 min	4 %
Boil	Columbus/Tomahawk/Zeus	8 g	20 min	15.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	23 g	Fermentis