PL

- Gravity **18 BLG**
- ABV **7.7 %**
- IBU **22**
- SRM **28.4**
- Style **German Pilsner (Pils)**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **25.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.1 liter(s)**
- Total mash volume **20.2 liter(s)**

Steps

- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **15.1 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.7 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.5 kg *(23.3%)*	82 %	7
Grain	Weyermann - Light Munich Malt	1 kg *(6.6%)*	82 %	14
Grain	Płatki owsiane	0.3 kg *(2%)*	80 %	3
Grain	Simpsons - Crystal Medium	0.25 kg *(1.7%)*	69 %	108
Liquid Extract	WES ekstrakt słodowy jasny	10 kg *(66.4%)*	12 %	45

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Mosaic	20 g	60 min	12.5 %
Boil	Marynka	0 g	30 min	10 %
Boil	Lublin (Lubelski)	0 g	20 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Mangrove Jack's M84 Bohemian Lager	Lager	Dry	11 g	Mangrove Jack's