

## Podaj Harpun!

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- Gravity **12.9 BLG**
- ABV ---
- IBU **23**
- SRM **28.3**
- Style **Brown Porter**

### Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **26.9 liter(s)**

### Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.8 liter(s)**
- Total mash volume **19.8 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **14.8 liter(s)** of strike water to **74.9C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **17.1 liter(s)** of **76C** water or to achieve **26.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale ale	4 kg (73.4%)	80 %	5.3
Grain	Brown	0.5 kg (9.2%)	71 %	180
Grain	Dark Crystal	0.35 kg (6.4%)	71 %	300
Grain	Pszeniczny czekoladowy	0.1 kg (1.8%)	65 %	1000
Adjunct	Płatki jęczmienne	0.5 kg (9.2%)	--- %	3

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Fuggles	45 g	60 min	4.5 %
Aroma (end of boil)	Fuggles	20 g	0 min	4.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM12 W szkocką kratę	Ale	Liquid	30 ml	Fermentum Mobile