kwas

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **18**
- SRM **3.4**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **17.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **20.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **13.3 liter(s)**
- Total mash volume **17.1 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **13.3 liter(s)** of strike water to **74.9C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **11.2 liter(s)** of **76C** water or to achieve **20.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	3.2 kg *(84.2%)*	82 %	4
Grain	Weyermann - Carapils	0.3 kg *(7.9%)*	78 %	4
Grain	Oats, Flaked	0.3 kg *(7.9%)*	80 %	2

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	5 g	60 min	11 %
Whirlpool	Oktawia	50 g	5 min	7.4 %
Whirlpool	amora preta	50 g	5 min	7.3 %
Dry Hop	EXP 2/20	100 g	5 day(s)	11.2 %
Dry Hop	amora preta	50 g	5 day(s)	7.3 %

Yeasts

Name	Type	Form	Amount	Laboratory
lactobacillus	Ale	Dry	5 g	---
US-05	Ale	Slant	150 ml	---

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