cascade single hop APA

- Gravity **13.9 BLG**
- ABV **---**
- IBU **42**
- SRM **---**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

Steps

- Temp **72 C**, Time **30 min**
- Temp **64 C**, Time **30 min**

Mash step by step

- Heat up **12 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **17.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	słód pale ale	2 kg *(50%)*	--- %	---
Grain	słód wiedeński	1 kg *(25%)*	--- %	---
Grain	słód monachijski	1 kg *(25%)*	--- %	---

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cascade	40 g	60 min	6 %
Boil	Cascade	10 g	30 min	6 %
Boil	Cascade	10 g	15 min	6 %
Boil	Cascade	25 g	10 min	6 %
Aroma (end of boil)	Cascade	10 g	5 min	6 %
Aroma (end of boil)	Cascade	10 g	1 min	6 %
Dry Hop	Cascade	25 g	7 day(s)	6 %

Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M44 US West Coast	Ale	Dry	10 g	Mangrove Jack's

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