HAPA

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **31**
- SRM **3.8**
- Style **American Wheat or Rye Beer**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **28.9 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.3 liter(s)**
- Total mash volume **24.8 liter(s)**

Steps

- Temp **67 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **19.3 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **40 min** at **67C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.1 liter(s)** of **76C** water or to achieve **28.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4 kg *(72.7%)*	80 %	5
Grain	Viking Pilsner malt	0.8 kg *(14.5%)*	82 %	4
Grain	Viking Wheat Malt	0.7 kg *(12.7%)*	83 %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sorachi Ace	10 g	20 min	12 %
Boil	Citra	10 g	20 min	12.9 %
Boil	Falconer's Flight	10 g	20 min	10.5 %
Aroma (end of boil)	Huell Melon	30 g	10 min	6.6 %
Whirlpool	Huell Melon	30 g	15 min	6.6 %
Przy 72C ustabilizowanej dodajemy				
Dry Hop	Lemon drop	30 g	3 day(s)	4.6 %
Dry Hop	Vic Secret	30 g	3 day(s)	16.3 %

Yeasts

Name	Type	Form	Amount	Laboratory

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

FM54 Gorączka kalifornijska	Ale	Slant	100 ml	Fermentum Mobile
FM53 Voss kveik	Ale	Slant	100 ml	Fermentum Mobile