

## sosen

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **45**
- SRM **4.9**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **22.8 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.9 liter(s)**
- Total mash volume **17.2 liter(s)**

### Steps

- Temp **68 C**, Time **50 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **12.9 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **50 min** at **68C**
- Keep mash **10 min** at **78C**
- Sparge using **14.2 liter(s)** of **76C** water or to achieve **22.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.5 kg (81.4%)	80 %	5
Grain	Monachijski	0.6 kg (14%)	80 %	16
Grain	Caramel/Crystal Malt - 10L	0.2 kg (4.7%)	75 %	20

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	20 g	60 min	15.5 %
Boil	Equinox	10 g	10 min	13.1 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11 g	Fermentis

### Extras

Type	Name	Amount	Use for	Time
Other	młode pędy sosny	45 g	Boil	25 min