

## Koniec roku

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **45**
- SRM **4.2**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **42 liter(s)**
- Trub loss **5 %**
- Size with trub loss **44.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **53.1 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **28.1 liter(s)**
- Total mash volume **37.5 liter(s)**

### Steps

- Temp **55 C**, Time **25 min**
- Temp **64 C**, Time **30 min**
- Temp **68 C**, Time **30 min**
- Temp **72 C**, Time **10 min**

### Mash step by step

- Heat up **28.1 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **25 min** at **55C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **68C**
- Keep mash **10 min** at **72C**
- Sparge using **34.4 liter(s)** of **76C** water or to achieve **53.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Munich Malt	0.822 kg (8.8%)	78 %	18
Grain	Viking Pale Ale malt	7.688 kg (82%)	80 %	5
Grain	Pszeniczny	0.86 kg (9.2%)	85 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	50 g	60 min	13 %
Boil	Equinox	25 g	10 min	13.1 %
Aroma (end of boil)	Equinox	25 g	5 min	13.1 %
Whirlpool	Mosaic	40 g	---	10 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	23 g	Fermentis