

## Forest IPA z pędami sosny

- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **37**
- SRM **8.1**
- Style **American IPA**

### Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **8 %/h**
- Boil size **26 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **23.3 liter(s)**

### Steps

- Temp **67 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **16.6 liter(s)** of strike water to **76.4C**
- Add grains
- Keep mash **45 min** at **67C**
- Keep mash **30 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **16.1 liter(s)** of **76C** water or to achieve **26 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4.4 kg (66.2%)	81 %	4
Grain	Karmelowy Czerwony	1 kg (15%)	75 %	59
Grain	Płatki owsiane	0.25 kg (3.8%)	85 %	3
Grain	Pszeniczny	1 kg (15%)	85 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Warrior	30 g	60 min	13.4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Fermentis

### Extras

Type	Name	Amount	Use for	Time
Herb	młode pędy Sosny	200 g	Boil	15 min
Herb	młode pędy Sosny	200 g	Boil	0 min

Herb	młode pędy Sosny	200 g	Secondary	5 day(s)
Fining	whirloc	1.25 g	Boil	15 min
Water Agent	gips piwowarski	4 g	Mash	60 min
Other	witamina C	4 g	Bottling	---