

Forest BLACK ALE

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **44**
- SRM **32.4**
- Style **Black IPA**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.5 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **18.9 liter(s)**
- Total mash volume **24.3 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **67 C**, Time **10 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **18.9 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **10 min** at **67C**
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **76C**
- Sparge using **14 liter(s)** of **76C** water or to achieve **27.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4 kg (74.1%)	81 %	4
Grain	Strzegom Monachijski typ II	0.5 kg (9.3%)	79 %	22
Grain	Płatki żytnie	0.4 kg (7.4%)	85 %	3
Grain	Black	0.5 kg (9.3%)	60 %	1350

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	20 g	60 min	15.5 %
Boil	Simcoe	25 g	5 min	13.2 %
Boil	Citra	25 g	5 min	13 %
Boil	Mosaic	25 g	0 min	10 %
Boil	Galaxy	25 g	0 min	15 %
Dry Hop	Simcoe	25 g	5 day(s)	13.2 %
Dry Hop	Mosaic	25 g	5 day(s)	10 %
Dry Hop	Simcoe	25 g	5 day(s)	13.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	300 ml	---

Extras

Type	Name	Amount	Use for	Time
Other	łuska ryżowa	350 g	Mash	10 min
Flavor	peły sosny	80 g	Secondary	5 day(s)

Notes

- 25% wody do zacierania to woda Demi.
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