

Czorny Woron

- Gravity **16.8 BLG**
- ABV **7.1 %**
- IBU **55**
- SRM **27.9**
- Style **Black IPA**

Batch size

- Expected quantity of finished beer **13 liter(s)**
- Trub loss **5 %**
- Size with trub loss **14.3 liter(s)**
- Boil time **65 min**
- Evaporation rate **5 %/h**
- Boil size **15.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **4.5 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **24.2 liter(s)**

Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **19.8 liter(s)** of strike water to **71.1C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **0.3 liter(s)** of **76C** water or to achieve **15.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	3 kg (68.2%)	81 %	4
Grain	Briess - Pale Ale Malt	1 kg (22.7%)	80 %	7
Grain	Abbey Malt Weyermann	0.1 kg (2.3%)	75 %	45
Grain	Carafa III	0.3 kg (6.8%)	70 %	1034

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	20 g	60 min	13 %
Boil	Citra	15 g	10 min	12 %
Boil	Mosaic	15 g	10 min	10 %
Dry Hop	Citra	20 g	3 day(s)	12 %
Dry Hop	Mosaic	20 g	3 day(s)	10 %
Dry Hop	Amarillo	20 g	3 day(s)	9.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
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Mangrove Jack's M44 US West Coast	Ale	Slant	100 ml	Mangrove Jack's
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Extras

Type	Name	Amount	Use for	Time
Spice	Skórka z 2 pomarańczy 2 cytrym i 1 limonki	10 g	Secondary	4 day(s)

Notes

- Zest leżakowany w wódce jedna dobę
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