

czarna dupa sm

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **33**
- SRM **38.1**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **21.4 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **75 C**, Time **10 min**

Mash step by step

- Heat up **16.6 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **75C**
- Sparge using **14.6 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	1.5 kg (31.6%)	80 %	5
Grain	Viking Malt Wędzony Czereśnią	1 kg (21.1%)	82 %	10
Grain	Żytni	1.5 kg (31.6%)	85 %	8
Grain	Strzegom Czekoladowy ciemny	0.2 kg (4.2%)	68 %	1200
Grain	Jęczmień palony	0.35 kg (7.4%)	55 %	1400
Grain	Strzegom Karmel 300	0.2 kg (4.2%)	70 %	299

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	60 min	10 %
Boil	Marynka	15 g	10 min	10.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis