

Robust Porter z malinami

- Gravity **19.3 BLG**
- ABV **8.4 %**
- IBU **37**
- SRM **41.5**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **25.5 liter(s)**
- Total mash volume **34 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **45 min**

Mash step by step

- Heat up **25.5 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **45 min** at **72C**
- Sparge using **9.4 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	4 kg (47.1%)	80 %	5
Grain	Strzegom Monachijski typ I	2 kg (23.5%)	79 %	16
Grain	Fawcett - Pszeniczny Czekoladowy	0.5 kg (5.9%)	73 %	1200
Grain	Karmelowy Jasny 30EBC	0.5 kg (5.9%)	75 %	30
Grain	Brown Malt (British Chocolate)	0.5 kg (5.9%)	70 %	128
Grain	Caramel/Crystal Malt - 120L	1 kg (11.8%)	72 %	236

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cluster	40 g	60 min	7.75 %
Boil	Willamette	20 g	15 min	5 %
Boil	Cluster	10 g	10 min	7.75 %
Whirlpool	Willamette	30 g	60 min	5 %