

AMSTuff

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **56**
- SRM **25.7**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **31 liter(s)**
- Trub loss **2 %**
- Size with trub loss **32.2 liter(s)**
- Boil time **80 min**
- Evaporation rate **10 %/h**
- Boil size **37.3 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **20.3 liter(s)**
- Total mash volume **27 liter(s)**

Steps

- Temp **62 C**, Time **10 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **20.3 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **10 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **23.8 liter(s)** of **76C** water or to achieve **37.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	pale ale	5 kg (74%)	80 %	6
Grain	Słód Caramunich Typ II Weyermann	0.13 kg (1.9%)	73 %	120
Grain	Strzegom Karmel 300	0.1 kg (1.5%)	70 %	299
Grain	Weyermann Caramunich 3	0.2 kg (3%)	76 %	150
Grain	Barwiący	0.15 kg (2.2%)	55 %	1400
Grain	Strzegom Czekoladowy ciemny	0.15 kg (2.2%)	68 %	1200
Grain	Czekoladowy	0.2 kg (3%)	60 %	788
Grain	Płatki owsiane	0.83 kg (12.3%)	85 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	15.1 %
Boil	Columbus/Tomahawk/Zeus	30 g	15 min	15.5 %
Boil	Cascade	50 g	5 min	5.9 %
Aroma (end of boil)	Cascade	50 g	0 min	5.9 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	150 ml	Safale

Notes

- z 62 stopni na 72 - bardzo powolne podnoszenie temperatury (47 minut)!
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