Drwal (brokreacja)

- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **75**
- SRM **28.9**
- Style **American Stout**

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 **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.9 liter(s)**
- Total mash volume **23.8 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **17.9 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **14.5 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	3.29 kg *(55.4%)*	80 %	5
Grain	Żytni	1.12 kg *(18.8%)*	85 %	8
Grain	Strzegom Monachijski typ II	0.82 kg *(13.9%)*	79 %	22
Grain	Carafa III	0.24 kg *(4%)*	70 %	1034
Grain	Karmelowy żytni Strzegom	0.24 kg *(4%)*	75 %	150
Grain	Fawcett - Pszeniczny Czekoladowy	0.24 kg *(4%)*	73 %	1001

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	17.65 g	45 min	15.5 %
Boil	Citra	17.65 g	30 min	12 %
Boil	Simcoe	17.65 g	30 min	13.2 %
Boil	Citra	17.65 g	15 min	12 %
Boil	Simcoe	17.65 g	15 min	13.2 %
Dry Hop	Simcoe	35.29 g	7 day(s)	13.2 %
Dry Hop	Citra	35.29 g	7 day(s)	12 %

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	13.53 g	Fermentis

Notes

- 67st - słody jasne
  78st - słody ciemne
  chmielenie na zimno w temp. 14-15 st.
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