

Polskie ciemne

- Gravity **10.5 BLG**
- ABV **4.2 %**
- IBU **20**
- SRM **3.2**
- Style **Grodziskie/Graetzer**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **6 liter(s) / kg**
- Mash size **27 liter(s)**
- Total mash volume **31.5 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **27 liter(s)** of strike water to **70.9C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **1 min** at **78C**
- Sparge using **5 liter(s)** of **76C** water or to achieve **27.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Grodziski pszoniczny wędzony dębem	3 kg (66.7%)	80 %	3
Grain	Strzegom Pilzneński	1 kg (22.2%)	80 %	4
Grain	Strzegom Wiedeński	0.5 kg (11.1%)	79 %	10

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	10 g	60 min	11 %
Whirlpool	Zula	30 g	15 min	10 %
Dry Hop	lunga	30 g	3 day(s)	10.7 %
Dry Hop	Zula	50 g	3 day(s)	10 %
Dry Hop	Cascade	50 g	3 day(s)	7.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
fermentis K-97	Ale	Dry	11.5 g	Fermentis

Extras

Type	Name	Amount	Use for	Time
Fining	whirflock	5 g	Boil	10 min