

Świąteczne

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **32**
- SRM **14.4**

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 **8 %/h**
- Boil size **25.5 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **21.2 liter(s)**

Steps

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

Mash step by step

- Heat up **15.9 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **14.9 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Monachijski typ I	1 kg (18.9%)	79 %	16
Grain	Briess - Pale Ale Malt	4 kg (75.5%)	80 %	7
Grain	Strzegom Karmel 600	0.1 kg (1.9%)	68 %	601
Grain	Czekoladowy	0.1 kg (1.9%)	60 %	788
Grain	Strzegom Karmel 150	0.1 kg (1.9%)	75 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	magnum	20 g	60 min	13 %
Aroma (end of boil)	saaz	25 g	10 min	3.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
us 05	Ale	Slant	150 ml	---

Extras

Type	Name	Amount	Use for	Time
Spice	imbir karm.	100 g	Boil	10 min
Spice	skórka pom. karm	100 g	Boil	10 min

Spice	cynamon	10 g	Boil	10 min
Spice	goździki	10 g	Boil	10 min
Spice	jałowiec	10 g	Boil	10 min