

# Poranny apel

- Gravity **16.4 BLG**
- ABV ---
- IBU **38**
- SRM **56.7**
- Style **Sweet Stout**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.7 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **22.8 liter(s)**
- Total mash volume **28.5 liter(s)**

## Steps

- Temp **52 C**, Time **15 min**
- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **2 min**

## Mash step by step

- Heat up **22.8 liter(s)** of strike water to **56C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **40 min** at **63C**
- Keep mash **20 min** at **72C**
- Keep mash **2 min** at **78C**
- Sparge using **10.6 liter(s)** of **76C** water or to achieve **27.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4 kg (62.5%)	82 %	4
Grain	Płatki owsiane	0.4 kg (6.3%)	75 %	3
Grain	Strzegom Czekoladowy ciemny	0.5 kg (7.8%)	68 %	1200
Grain	Pszeniczny	0.5 kg (7.8%)	75 %	4
Grain	Jęczmień palony	0.3 kg (4.7%)	55 %	985
Sugar	Milk Sugar (Lactose)	0.7 kg (10.9%)	76.1 %	0

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Boil	Perle	30 g	15 min	7 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale

## Extras

Type	Name	Amount	Use for	Time
Other	ziarna kawy	50 g	Secondary	6 day(s)
Spice	wanilia	50 g	Secondary	6 day(s)