

Żyto

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **14**
- SRM **6.9**
- Style **Roggenbier**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **21.4 liter(s)**

Steps

- Temp **44 C**, Time **20 min**
- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **79 C**, Time **2 min**

Mash step by step

- Heat up **16.6 liter(s)** of strike water to **47.4C**
- Add grains
- Keep mash **20 min** at **44C**
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **2 min** at **79C**
- Sparge using **13.5 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	3 kg (63.2%)	85 %	8
Grain	Strzegom Monachijski typ I	1 kg (21.1%)	79 %	16
Grain	Strzegom Pilzneński	0.5 kg (10.5%)	80 %	4
Grain	Caramunich® typ I	0.25 kg (5.3%)	73 %	80

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	10 g	50 min	8.7 %
Boil	Marynka	10 g	15 min	8.7 %

Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M20 Bavarian Wheat	Wheat	Slant	200 ml	Mangrove Jack's