

Żytek#1

- Gravity **17.1 BLG**
- ABV ---
- IBU **69**
- SRM **5.4**
- Style **Rye IPA**

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 **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.6 liter(s)**
- Total mash volume **24.8 liter(s)**

Steps

- Temp **53 C**, Time **10 min**
- Temp **66 C**, Time **40 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **2 min**

Mash step by step

- Heat up **18.6 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **10 min** at **53C**
- Keep mash **40 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **2 min** at **78C**
- Sparge using **12.9 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale	4.2 kg (67.7%)	80 %	5
Grain	Żytni	1.5 kg (24.2%)	85 %	8
Grain	Pszeniczny	0.5 kg (8.1%)	85 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	Columbus/Tomahawk/Zeus	30 g	15 min	15.5 %
Aroma (end of boil)	Equinox	5 g	15 min	13.1 %
Aroma (end of boil)	Galaxy	5 g	15 min	15 %
Aroma (end of boil)	Amarillo	5 g	15 min	9.5 %
Aroma (end of boil)	Amarillo	15 g	10 min	9.5 %
Aroma (end of boil)	Galaxy	15 g	10 min	15 %
Aroma (end of boil)	Equinox	15 g	10 min	13.1 %
Aroma (end of boil)	Galaxy	20 g	5 min	15 %
Aroma (end of boil)	Amarillo	20 g	5 min	9.5 %
Aroma (end of boil)	Equinox	20 g	5 min	13.1 %

Whirlpool	Galaxy	60 g	0 min	15 %
Whirlpool	Equinox	50 g	0 min	13.1 %
Whirlpool	Amarillo	40 g	0 min	9.5 %
Dry Hop	Galaxy	50 g	3 day(s)	15 %
Dry Hop	Amarillo	50 g	3 day(s)	9.5 %
Dry Hop	Equinox	50 g	3 day(s)	13.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM52 Amerykański Sen	Ale	Liquid	200 ml	Fermentum Mobile