

# Żytnie 1

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **16**
- SRM **8.2**
- Style **Roggenbier**

## Batch size

- Expected quantity of finished beer **45 liter(s)**
- Trub loss **3 %**
- Size with trub loss **46.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **52.9 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **30.9 liter(s)**
- Total mash volume **41.2 liter(s)**

## Steps

- Temp **52 C**, Time **10 min**
- Temp **62 C**, Time **30 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **30.9 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **30 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **32.3 liter(s)** of **76C** water or to achieve **52.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	5 kg (48.5%)	85 %	8
Grain	Lager Malteurop	4.2 kg (40.8%)	81 %	3
Grain	Słód pszeniczny	1 kg (9.7%)	82 %	5
Grain	Żyto prażone	0.1 kg (1%)	65 %	1100

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	50 g	60 min	3.8 %
Boil	Puławski	25 g	60 min	3.5 %
Aroma (end of boil)	Puławski	25 g	15 min	3.5 %

## Extras

Type	Name	Amount	Use for	Time
Other	Łuska ryżowa sterylizowana	250 g	Mash	10 min