

# Żytniak

- Gravity **14 BLG**
- ABV **5.8 %**
- IBU **32**
- SRM **4.4**
- Style **American Wheat or Rye Beer**

## 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 **15 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.5 liter(s)**
- Total mash volume **26 liter(s)**

## Steps

- Temp **53 C**, Time **15 min**
- Temp **66 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **19.5 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **15 min** at **53C**
- Keep mash **60 min** at **66C**
- Keep mash **10 min** at **76C**
- Sparge using **16 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - 2 Row Brewers Malt	5 kg (75.8%)	80.5 %	4
Grain	Briess - Rye Malt	1 kg (15.2%)	80 %	7
Grain	Briess - Wheat Malt, White	0.5 kg (7.6%)	85 %	5
Adjunct	Rice Hulls	0.1 kg (1.5%)	1 %	0

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Topaz	10 g	60 min	16 %
Boil	Fuggles	15 g	15 min	5.3 %
Boil	Topaz	10 g	15 min	16 %
Boil	Fuggles	15 g	5 min	5.3 %
Boil	Topaz	15 g	5 min	15 %
Whirlpool	Topaz	30 g	---	15 %
Whirlpool	Fuggles	35 g	---	4.5 %
Dry Hop	Fuggles	35 g	3 day(s)	5.3 %
Dry Hop	Topaz	35 g	3 day(s)	16 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's -M15 Empire Ale	Ale	Dry	20 g	Mangrove Jack's

## Extras

Type	Name	Amount	Use for	Time
Water Agent	lactic acid 80%	11 g	Mash	60 min