

# Żytni FES

- Gravity **16.8 BLG**
- ABV ---
- IBU **41**
- SRM **48.2**
- Style **Foreign Extra Stout**

## 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 **18.1 liter(s)**
- Total mash volume **24.2 liter(s)**

## Steps

- Temp **45 C**, Time **20 min**
- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **45 min**
- Temp **80 C**, Time **5 min**

## Mash step by step

- Heat up **18.1 liter(s)** of strike water to **49.2C**
- Add grains
- Keep mash **20 min** at **45C**
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **5 min** at **80C**
- Sparge using **13.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	2.5 kg (41.3%)	85 %	7
Grain	Żytni	2 kg (33.1%)	85 %	8
Grain	Monachijski	1 kg (16.5%)	80 %	16
Grain	Strzegom Czekoladowy ciemny	0.3 kg (5%)	68 %	1200
Grain	Jęczmień palony	0.25 kg (4.1%)	55 %	985

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	35 g	60 min	11 %
Boil	lunga	15 g	2 min	11 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Danstar - Nottingham	Ale	Dry	10 g	Danstar

## Extras

Type	Name	Amount	Use for	Time
Fining	Mech irlandzki	5 g	Boil	15 min