

# Bitter Pokazy

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **22**
- SRM **10.3**
- Style **Standard/Ordinary Bitter**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.5 liter(s)**
- Total mash volume **22 liter(s)**

## Steps

- Temp **68 C**, Time **70 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **16.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **70 min** at **68C**
- Keep mash **5 min** at **76C**
- Sparge using **18 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4.5 kg (81.8%)	81 %	4
Grain	Cara Crystal	0.5 kg (9.1%)	79 %	150
Grain	Caramunich® typ I	0.5 kg (9.1%)	73 %	80

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Fuggles	30 g	60 min	4.5 %
Boil	Amarillo	20 g	15 min	9.5 %
Aroma (end of boil)	Fuggles	30 g	0 min	4.5 %
Aroma (end of boil)	Amarillo	40 g	0 min	9.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM10 O czym szumią wierzby	Ale	Liquid	1000 ml	---

## Extras

Type	Name	Amount	Use for	Time
Fining	Whirflock	7 g	Boil	70 min

Water Agent	Sól	7 g	Boil	70 min
-------------	-----	-----	------	--------