

# Bière du Žur

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **8**
- SRM **6.3**

## Batch size

- Expected quantity of finished beer **13 liter(s)**
- Trub loss **15 %**
- Size with trub loss **14.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **18.6 liter(s)**

## Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.2 liter(s)**
- Total mash volume **17.6 liter(s)**

## Steps

- Temp **45 C**, Time **10 min**
- Temp **65 C**, Time **45 min**
- Temp **72 C**, Time **10 min**
- Temp **77 C**, Time **5 min**

## Mash step by step

- Heat up **13.2 liter(s)** of strike water to **49.2C**
- Add grains
- Keep mash **10 min** at **45C**
- Keep mash **45 min** at **65C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **77C**
- Sparge using **9.8 liter(s)** of **76C** water or to achieve **18.6 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytńi Viking Malt	2 kg (45.5%)	85 %	8
Grain	Wędzony bukiem Bestmalz	2 kg (45.5%)	82 %	10
Steinbach				
Grain	Rye, Flaked	0.4 kg (9.1%)	78.3 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	10 g	60 min	4.3 %
Boil	Lublin (Lubelski)	10 g	5 min	4.3 %
Aroma (end of boil)	Lublin (Lubelski)	10 g	0 min	4.3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Us-05	Ale	Dry	11.5 g	---

## Extras

Type	Name	Amount	Use for	Time
Flavor	Sól, czosnek, cebula, majeranek, pieprz czarny, marchew, liście laurowe, pasternak, ziele angielskie, koperek, liście selera	15 g	Boil	5 min
Water Agent	chlerek wapnia	5 g	Boil	60 min
Water Agent	epsom	1 g	Boil	60 min