

# black rye ipa

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- Gravity **11.9 BLG**
- ABV ---
- IBU **32**
- SRM **46.6**
- Style **American Wheat or Rye Beer**

## Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **19.2 liter(s)**

## Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **28 C**, Time **1 min**

## Mash step by step

- Heat up **14.4 liter(s)** of strike water to **29.3C**
- Add grains
- Keep mash **1 min** at **28C**
- Keep mash **60 min** at **66C**
- Keep mash **10 min** at **72C**
- Sparge using **18.2 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	1 kg (20.8%)	81 %	4
Grain	Żytni	2 kg (41.7%)	85 %	8
Grain	Jęczmień palony	0.3 kg (6.3%)	55 %	985
Grain	Strzegom Czekoladowy ciemny	0.3 kg (6.3%)	68 %	1200
Grain	Strzegom Wiedeński	1 kg (20.8%)	79 %	10
Grain	zakwaszajacy	0.2 kg (4.2%)	75 %	7

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Brewers Gold	20 g	30 min	4.5 %
Boil	Cascade	30 g	60 min	6 %
Aroma (end of boil)	Cascade	10 g	10 min	6 %
Aroma (end of boil)	Cascade	10 g	5 min	6 %

## Yeasts

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