

## xmas ale

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- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **36**
- SRM **26.7**
- Style **Old Ale**

### Batch size

- Expected quantity of finished beer **13 liter(s)**
- Trub loss **5 %**
- Size with trub loss **14.3 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **17.9 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **13.8 liter(s)**
- Total mash volume **17.8 liter(s)**

### Steps

- Temp **66 C**, Time **90 min**
- Temp **75 C**, Time **10 min**

### Mash step by step

- Heat up **13.8 liter(s)** of strike water to **72.6C**
- Add grains
- Keep mash **90 min** at **66C**
- Keep mash **10 min** at **75C**
- Sparge using **8.1 liter(s)** of **76C** water or to achieve **17.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	3 kg (70.6%)	80 %	7
Grain	Caramel/Crystal Malt - 40L	0.2 kg (4.7%)	74 %	79
Grain	Wheat, Flaked	0.1 kg (2.4%)	77 %	4
Grain	Special B Malt	0.25 kg (5.9%)	65.2 %	315
Grain	Chocolate Malt (UK)	0.2 kg (4.7%)	73 %	887
Sugar	Invert Sugar	0.3 kg (7.1%)	100 %	0
Grain	Simpsons - Crystal Rye	0.2 kg (4.7%)	73 %	177

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings	25 g	90 min	5.1 %
Boil	East Kent Goldings	25 g	30 min	5.1 %
Boil	East Kent Goldings	10 g	10 min	5.1 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM11 Wichrowe Wzgórza	Ale	Liquid	500 ml	Fermentum Mobile

## Extras

Type	Name	Amount	Use for	Time
Spice	cynamon	4 g	Boil	15 min
Spice	gałka m.	3 g	Boil	15 min
Spice	goździki	8 g	Boil	15 min
Spice	imbir	3 g	Boil	15 min
Spice	cukier waniliowy	30 g	Boil	15 min
Spice	przyprawa do piernika	20 g	Boil	15 min
Spice	ziele angielskie	5 g	Boil	15 min