

# kombinator

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- Gravity **17.7 BLG**
- ABV ---
- IBU **71**
- SRM **12.8**
- Style **Brown IPA**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

## Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3.7 liter(s) / kg**
- Mash size **8.5 liter(s)**
- Total mash volume **10.8 liter(s)**

## Steps

- Temp **69 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **8.5 liter(s)** of strike water to **75.6C**
- Add grains
- Keep mash **60 min** at **69C**
- Keep mash **10 min** at **76C**
- Sparge using **20.3 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Liquid Extract	Liquid Extract (LME) - Pilsner	1.7 kg (28.3%)	78 %	8
Liquid Extract	Dark Liquid Extract	1.7 kg (28.3%)	78 %	35
Grain	Strzegom Pale Ale	2 kg (33.3%)	79 %	6
Grain	Strzegom Bursztynowy	0.15 kg (2.5%)	70 %	49
Grain	Melanoiden Malt	0.15 kg (2.5%)	80 %	39
Sugar	Dememera Sugar	0.3 kg (5%)	100 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	20 g	60 min	15.5 %
Boil	Amarillo	20 g	30 min	9.5 %
Boil	Cascade	20 g	30 min	6 %
Boil	Amarillo	15 g	15 min	9.5 %
Boil	Cascade	15 g	15 min	6 %
Boil	Citra	15 g	15 min	12 %
Whirlpool	Cascade	15 g	15 min	6 %
Whirlpool	Amarillo	15 g	15 min	9.5 %

Whirlpool	Citra	15 g	15 min	12 %
Dry Hop	Citra	30 g	7 day(s)	12 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	300 ml	Safale