

Sour Ale

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **29**
- SRM **3.1**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **2.5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **30 min**
- Evaporation rate **15 %/h**
- Boil size **21.9 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

Steps

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

Mash step by step

- Heat up **13.5 liter(s)** of strike water to **77.2C**
- Add grains
- Keep mash **60 min** at **69C**
- Sparge using **12.9 liter(s)** of **76C** water or to achieve **21.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	3.5 kg (77.8%)	80.5 %	2
Grain	Weyermann - Pale Wheat Malt	1 kg (22.2%)	85 %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	Cascade	100 g	5 min	5.5 %
Boil	citra	5 g	15 min	12.8 %
Aroma (end of boil)	citra	35 g	5 min	12.8 %

Yeasts

Name	Type	Form	Amount	Laboratory
WHC Sanders	Ale	Slant	500 ml	WHC

Extras

Type	Name	Amount	Use for	Time
Other	L.Rhamnosus	4.6 g	Primary	2 day(s)
Other	L.Plantarum	4.6 g	Primary	2 day(s)