

Black Cow

- Gravity **13.8 BLG**
- ABV ---
- IBU **32**
- SRM **40**
- Style **Sweet Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.4 liter(s) / kg**
- Mash size **15.1 liter(s)**
- Total mash volume **19.6 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **15.1 liter(s)** of strike water to **70.5C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **14.7 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	3.8 kg (76.8%)	81 %	4
Grain	Caraaroma	0.25 kg (5.1%)	78 %	400
Grain	Czekoladowy	0.4 kg (8.1%)	60 %	960
Sugar	Milk Sugar (Lactose)	0.5 kg (10.1%)	76.1 %	0

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Perle	40 g	60 min	7 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale

Extras

Type	Name	Amount	Use for	Time
Other	laktoza	500 g	Boil	10 min