

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 |