

# 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 |