

## Lager (centennial)

- Gravity **8 BLG**
- ABV **3.1 %**
- IBU **21**
- SRM **4.1**
- Style **Vienna Lager**

### 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 **4.5 liter(s) / kg**
- Mash size **15.8 liter(s)**
- Total mash volume **19.3 liter(s)**

### Steps

- Temp **52 C**, Time **10 min**
- Temp **65 C**, Time **60 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **3 min**

### Mash step by step

- Heat up **15.8 liter(s)** of strike water to **55.5C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **60 min** at **65C**
- Keep mash **30 min** at **72C**
- Keep mash **3 min** at **78C**
- Sparge using **13 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

| Type  | Name                   | Amount         | Yield | EBC |
|-------|------------------------|----------------|-------|-----|
| Grain | Viking Pilsner malt    | 3 kg (85.7%)   | 82 %  | 4   |
| Grain | viking malt caramel 30 | 0.5 kg (14.3%) | 7 %   | 30  |

### Hops

| Use for | Name       | Amount | Time   | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil    | Centennial | 25 g   | 20 min | 10.5 %     |

### Yeasts

| Name             | Type  | Form | Amount | Laboratory |
|------------------|-------|------|--------|------------|
| Saflager W 34/70 | Lager | Dry  | 11.5 g | Fermentis  |

### Extras

| Type                                 | Name         | Amount | Use for | Time    |
|--------------------------------------|--------------|--------|---------|---------|
| Other                                | łuska ryżowa | 100 g  | Mash    | 103 min |
| dodatek ułatwia późniejszą filtrację |              |        |         |         |