

## Bez Niemca ;-)

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **22**
- SRM **3.4**
- Style **Kölsch**

### Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.5 liter(s)**
- Total mash volume **22 liter(s)**

### Steps

- Temp **52 C**, Time **10 min**
- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **16.5 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **45 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **20.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

### Fermentables

| Type  | Name                | Amount         | Yield | EBC |
|-------|---------------------|----------------|-------|-----|
| Grain | Strzegom Pilzneński | 4.5 kg (81.8%) | 80 %  | 3.8 |
| Grain | Strzegom pszeniczny | 1 kg (18.2%)   | 81 %  | 5   |

### Hops

| Use for | Name                      | Amount | Time   | Alpha acid |
|---------|---------------------------|--------|--------|------------|
| Boil    | marynka 2021 2021<br>2021 | 20 g   | 60 min | 8.6 %      |
| Boil    | Żatecki 2021 2021<br>2021 | 50 g   | 10 min | 3.74 %     |

### Yeasts

| Name                                | Type  | Form   | Amount | Laboratory       |
|-------------------------------------|-------|--------|--------|------------------|
| FM50 Kłosy Kansas<br>2022 2022 2022 | Wheat | Liquid | 150 ml | Fermentum Mobile |