

## Kozioł do kwadratu

- Gravity **20 BLG**
- ABV **8.8 %**
- IBU **25**
- SRM **10.6**
- Style **Doppelbock**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **25.9 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **22 liter(s)**
- Total mash volume **30.8 liter(s)**

### Steps

- Temp **62 C**, Time **30 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **22 liter(s)** of strike water to **70.4C**
- Add grains
- Keep mash **30 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **12.7 liter(s)** of **76C** water or to achieve **25.9 liter(s)** of wort

### Fermentables

| Type  | Name                                | Amount         | Yield  | EBC |
|-------|-------------------------------------|----------------|--------|-----|
| Grain | Wiedeński                           | 4.2 kg (47.7%) | 79 %   | 10  |
| Grain | IREKS Pilzneński                    | 2.2 kg (25%)   | 80.5 % | 4   |
| Grain | Monachijski                         | 2 kg (22.7%)   | 80 %   | 16  |
| Grain | Słód Caramunich<br>Typ II Weyermann | 0.2 kg (2.3%)  | 73 %   | 120 |
| Grain | Biscuit Malt                        | 0.2 kg (2.3%)  | 79 %   | 45  |

### Hops

| Use for             | Name                         | Amount | Time   | Alpha acid |
|---------------------|------------------------------|--------|--------|------------|
| Boil                | lunga                        | 25 g   | 40 min | 12.9 %     |
| Aroma (end of boil) | Lubelski Polish Hops<br>2018 | 50 g   | 5 min  | 2.6 %      |

### Yeasts

| Name  | Type  | Form  | Amount | Laboratory |
|-------|-------|-------|--------|------------|
| 34/70 | Lager | Slant | 350 ml | Fermentis  |

### Extras

| Type   | Name           | Amount | Use for | Time   |
|--------|----------------|--------|---------|--------|
| Fining | Mech irlandzki | 5 g    | Boil    | 15 min |