

ALTBIER

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **52**
- SRM **11.7**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **0 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.6 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.8 liter(s)**
- Total mash volume **18.4 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **50 min**
- Temp **75 C**, Time **5 min**

Mash step by step

- Heat up **13.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **50 min** at **72C**
- Keep mash **5 min** at **75C**
- Sparge using **17.4 liter(s)** of **76C** water or to achieve **26.6 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|-------|-----|
| Grain | Monachijski | 4 kg (87.1%) | 80 % | 16 |
| Grain | Caramel Munich I Bestmalz | 0.1 kg (2.2%) | 75 % | 90 |
| Grain | Carafa Special I | 0.04 kg (0.9%) | 65 % | 900 |
| Grain | Słód Caramunich Typ II Weyermann | 0.15 kg (3.3%) | 73 % | 120 |
| Grain | Biscuit Malt | 0.2 kg (4.4%) | 79 % | 45 |
| Grain | Amber | 0.1 kg (2.2%) | 73 % | 120 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------------------|--------|--------|------------|
| Boil | Magnum | 25 g | 60 min | 13 % |
| Boil | Hallertau Spalt Select | 20 g | 30 min | 4.7 % |
| Boil | Hallertau Spalt Select | 30 g | 15 min | 4.7 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

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|-----------------------|-----|-------|--------|------------------|
| FM42 Stare Nadreńskie | Ale | Slant | 150 ml | Fermentum Mobile |
|-----------------------|-----|-------|--------|------------------|