

altbier

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **45**
- SRM **12.1**
- Style **Düsseldorf Altbier**

Batch size

- Expected quantity of finished beer **32 liter(s)**
- Trub loss **5 %**
- Size with trub loss **33.6 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **41.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **25.3 liter(s)**
- Total mash volume **33.8 liter(s)**

Steps

- Temp **53 C**, Time **15 min**
- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **2 min**

Mash step by step

- Heat up **25.3 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **15 min** at **53C**
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **2 min** at **78C**
- Sparge using **24.6 liter(s)** of **76C** water or to achieve **41.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|-------|-----|
| Grain | Pilzneński | 4.5 kg (53.3%) | 81 % | 4 |
| Grain | Strzegom Monachijski typ II | 2.5 kg (29.6%) | 79 % | 22 |
| Grain | Słód pszeniczny Weyermann | 1 kg (11.8%) | 80 % | 4 |
| Grain | Słód Caramunich Typ II Weyermann | 0.3 kg (3.6%) | 73 % | 120 |
| Grain | Carafa II | 0.15 kg (1.8%) | 70 % | 812 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|----------------------|--------|--------|------------|
| Boil | Magnum | 45 g | 60 min | 13.5 % |
| Boil | Hallertau Mittelfruh | 35 g | 15 min | 3 % |
| Boil | Hallertau Mittelfruh | 25 g | 5 min | 3 % |

Yeasts

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

| | | | | |
|-----------------------|-----|--------|-------|------------------|
| FM42 Stare Nadreńskie | Ale | Liquid | 48 ml | Fermentum Mobile |
|-----------------------|-----|--------|-------|------------------|