

# Dusseldorf Altbier

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **43**
- SRM **14.2**
- Style **Düsseldorf Altbier**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **90 min**
- Evaporation rate **14.5 %/h**
- Boil size **28.6 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **23.3 liter(s)**

## Fermentables

| Type  | Name                     | Amount         | Yield | EBC  |
|-------|--------------------------|----------------|-------|------|
| Grain | Weyermann - Pilsner Malt | 4 kg (68.6%)   | 81 %  | 5    |
| Grain | Munich Malt              | 1 kg (17.2%)   | 80 %  | 25   |
| Grain | Aromatic Malt            | 0.5 kg (8.6%)  | 78 %  | 51   |
| Grain | Caramunich® typ I        | 0.24 kg (4.1%) | 73 %  | 90   |
| Grain | Weyermann - Carafa II    | 0.09 kg (1.5%) | 70 %  | 1100 |

## Hops

| Use for | Name     | Amount | Time   | Alpha acid |
|---------|----------|--------|--------|------------|
| Boil    | Magnum   | 30 g   | 60 min | 11.5 %     |
| Boil    | Tettnang | 25 g   | 15 min | 3.8 %      |
| Boil    | Tettnang | 25 g   | 5 min  | 3.8 %      |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale K-97 | Ale  | Dry  | 11.5 g | Fermentis  |

## Extras

| Type   | Name       | Amount | Use for | Time   |
|--------|------------|--------|---------|--------|
| Fining | irish moss | 5 g    | Boil    | 10 min |

## Notes

- Malts added to 17.5 l of water at 72C  
Single Decoction:  
infusing for 50 minutes to Conversion Rest (total: 1h 45min)  
pulled 4l out of the mash, rested 70-72 for 15 min then boiled for 25 min  
added decoction and mashed out at 75 C  
bedded 3l for lautering, sparged with 15l (75C) - went down from 20 to 11.1 brix  
29l set for boiling for 90 min  
13.9 brix after boiling (13.4 blg)

8 brix after 20 days of fermentation in 16-18 C (7.7 bgl) => efficiency: 43%  
temp ramped up to 21 C for last week  
Final Gravity => 7.2 bgl, efficiency < 50%  
expected ABV => 4,0%  
carbonation 2.2 (110g per 21l)  
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