

# Munich Dunkel

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **24**
- SRM **20.8**
- Style **Munich Dunkel**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **22.4 liter(s)**

## Steps

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

## Mash step by step

- Heat up **16.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

## Fermentables

| Type  | Name                             | Amount         | Yield | EBC  |
|-------|----------------------------------|----------------|-------|------|
| Grain | Strzegom Monachijski typ I       | 4.7 kg (83.9%) | 79 %  | 16   |
| Grain | Słód Caramunich Typ II Weyermann | 0.5 kg (8.9%)  | 73 %  | 120  |
| Grain | Weyermann - Dehusked Carafo III  | 0.2 kg (3.6%)  | 15 %  | 1024 |
| Grain | Weyermann - Melanoiden Malt      | 0.2 kg (3.6%)  | 81 %  | 53   |

## Hops

| Use for | Name     | Amount | Time   | Alpha acid |
|---------|----------|--------|--------|------------|
| Boil    | Iunga    | 15 g   | 60 min | 11.5 %     |
| Boil    | Tettnang | 25 g   | 60 min | 2.5 %      |
| Boil    | Tettnang | 25 g   | 0 min  | 2.5 %      |

## Yeasts

| Name             | Type  | Form | Amount | Laboratory |
|------------------|-------|------|--------|------------|
| Saflager W 34/70 | Lager | Dry  | 22 g   | Fermentis  |

## Extras

Recipe has been printed via **BREWNES.com** - a complex online solution for homebrewers to track brewing process easily.

| Type        | Name              | Amount | Use for | Time   |
|-------------|-------------------|--------|---------|--------|
| Water Agent | CaCl <sub>2</sub> | 7 g    | Mash    | 60 min |
| Water Agent | Lactic Acid       | 7 g    | Mash    | 60 min |
| Fining      | Whirlfloc-T       | 2.5 g  | Boil    | 10 min |