

# mandarina apa

- Gravity **10.2 BLG**
- ABV **4.1 %**
- IBU **30**
- SRM **8.6**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **28.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **63 C**, Time **30 min**
- Temp **73 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **13.5 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **73C**
- Keep mash **1 min** at **78C**
- Sparge using **19.8 liter(s)** of **76C** water or to achieve **28.8 liter(s)** of wort

## Fermentables

| Type  | Name                 | Amount        | Yield | EBC |
|-------|----------------------|---------------|-------|-----|
| Grain | Strzegom Pilzneński  | 2 kg (44.4%)  | 80 %  | 4   |
| Grain | Fawcett - Crystal    | 0.3 kg (6.7%) | 70 %  | 160 |
| Grain | Viking Pale Ale malt | 2 kg (44.4%)  | 80 %  | 5   |
| Grain | Strzegom Karmel 150  | 0.2 kg (4.4%) | 75 %  | 150 |

## Hops

| Use for   | Name              | Amount | Time   | Alpha acid |
|-----------|-------------------|--------|--------|------------|
| Boil      | Marynka           | 5 g    | 50 min | 10 %       |
| Boil      | Mandarina Bavaria | 20 g   | 15 min | 10 %       |
| Boil      | Mandarina Bavaria | 20 g   | 10 min | 10 %       |
| Boil      | Mandarina Bavaria | 25 g   | 5 min  | 10 %       |
| Whirlpool | Cascade           | 25 g   | 0 min  | 6 %        |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 11 g   | Safale     |