

## Biały murzyn z mango 2

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- Gravity **11.4 BLG**
- ABV **4.6 %**
- IBU **23**
- SRM **3.3**
- Style **Witbier**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.6 liter(s)**
- Total mash volume **18.2 liter(s)**

### Steps

- Temp **50 C**, Time **30 min**
- Temp **67 C**, Time **60 min**
- Temp **73 C**, Time **15 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **13.6 liter(s)** of strike water to **55C**
- Add grains
- Keep mash **30 min** at **50C**
- Keep mash **60 min** at **67C**
- Keep mash **15 min** at **73C**
- Keep mash **1 min** at **78C**
- Sparge using **16.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

| Type  | Name                | Amount          | Yield  | EBC |
|-------|---------------------|-----------------|--------|-----|
| Grain | Strzegom Pilzneński | 2 kg (44%)      | 80 %   | 4   |
| Grain | Płatki owsiane      | 1.4 kg (30.8%)  | 85 %   | 3   |
| Grain | Barley, Flaked      | 0.4 kg (8.8%)   | 70 %   | 4   |
| Grain | Rye, Flaked         | 0.75 kg (16.5%) | 78.3 % | 4   |

### Hops

| Use for   | Name    | Amount | Time   | Alpha acid |
|-----------|---------|--------|--------|------------|
| Boil      | lunga   | 15 g   | 60 min | 10.7 %     |
| Whirlpool | Citra   | 8 g    | 15 min | 12 %       |
| Whirlpool | Cascade | 11 g   | 15 min | 6.7 %      |

### Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-33 | Ale  | Dry  | 12.5 g | Fermentis  |

### Extras

| Type   | Name     | Amount | Use for   | Time     |
|--------|----------|--------|-----------|----------|
| Spice  | kolendra | 5 g    | Boil      | 5 min    |
| Spice  | Curacao  | 10 g   | Boil      | 5 min    |
| Spice  | kolendra | 10 g   | Boil      | 0 min    |
| Spice  | Curacao  | 20 g   | Boil      | 0 min    |
| Fining | Żelatyna | 10 g   | Secondary | 1 day(s) |