

## APA v11 #102

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- Gravity **14 BLG**
- ABV **5.8 %**
- IBU **37**
- SRM **4.7**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.5 liter(s)**
- Boil time **85 min**
- Evaporation rate **14 %/h**
- Boil size **27.2 liter(s)**

### Mash information

- Mash efficiency **78 %**
- Liquor-to-grist ratio **3.81 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **25.3 liter(s)**

### Steps

- Temp **67 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **7 min**

### Mash step by step

- Heat up **20 liter(s)** of strike water to **73.2C**
- Add grains
- Keep mash **45 min** at **67C**
- Keep mash **30 min** at **72C**
- Keep mash **7 min** at **76C**
- Sparge using **12.5 liter(s)** of **76C** water or to achieve **27.2 liter(s)** of wort

### Fermentables

| Type  | Name                     | Amount         | Yield  | EBC |
|-------|--------------------------|----------------|--------|-----|
| Grain | Mep©Ale                  | 4.1 kg (78.1%) | 82.2 % | 4.8 |
| Grain | płatki owsiane           | 0.5 kg (9.5%)  | 83 %   | 3   |
| Grain | Bestmalz -<br>pszeniczny | 0.4 kg (7.6%)  | 83 %   | 5   |
| Grain | Viking - karmelowy<br>30 | 0.25 kg (4.8%) | 75 %   | 30  |

### Hops

| Use for             | Name     | Amount | Time     | Alpha acid |
|---------------------|----------|--------|----------|------------|
| Boil                | Warrior  | 5.74 g | 60 min   | 14.7 %     |
| Boil                | Columbus | 20 g   | 15 min   | 12.4 %     |
| Aroma (end of boil) | Simcoe   | 26 g   | 5 min    | 13.2 %     |
| Aroma (end of boil) | Ekuanot  | 20 g   | 5 min    | 13.1 %     |
| Aroma (end of boil) | Sabro    | 35 g   | 1 min    | 14.8 %     |
| Dry Hop             | Sabro    | 30 g   | 3 day(s) | 14.8 %     |
| Dry Hop             | Citra    | 30 g   | 3 day(s) | 13.5 %     |
| Dry Hop             | Ekuanot  | 30 g   | 3 day(s) | 13.1 %     |

## Yeasts

| Name                        | Type | Form  | Amount | Laboratory       |
|-----------------------------|------|-------|--------|------------------|
| FM54 Gorączka kalifornijska | Ale  | Slant | 160 ml | Fermentum Mobile |

## Extras

| Type        | Name                   | Amount | Use for | Time  |
|-------------|------------------------|--------|---------|-------|
| Water Agent | gips                   | 2 g    | Mash    | ---   |
| Water Agent | kwask mlekowy 80% [ml] | 4 g    | Mash    | ---   |
| Water Agent | chlerek wapnia [ml]    | 5.14 g | Mash    | ---   |
| Water Agent | epsom                  | 1.5 g  | Mash    | ---   |
| Water Agent | mech irlandzki         | 3 g    | Boil    | 5 min |