

## Trening jakościowy

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- Gravity **15.2 BLG**
- ABV **6.3 %**
- IBU **35**
- SRM **5**
- Style **American IPA**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **14 %/h**
- Boil size **23.8 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **22.4 liter(s)**

### Steps

- Temp **66 C**, Time **40 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **16.8 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **40 min** at **66C**
- Keep mash **5 min** at **76C**
- Sparge using **12.6 liter(s)** of **76C** water or to achieve **23.8 liter(s)** of wort

### Fermentables

| Type    | Name                       | Amount         | Yield | EBC |
|---------|----------------------------|----------------|-------|-----|
| Grain   | słód Pale Ale              | 4 kg (68.4%)   | 79 %  | 6   |
| Grain   | słód pszeniczny Heidelberg | 0.6 kg (10.3%) | 82 %  | 3   |
| Grain   | słód Pale Ale Maris Otter  | 1 kg (17.1%)   | 80 %  | 5   |
| Adjunct | płatki owsiane             | 0.25 kg (4.3%) | --- % | --- |

### Hops

| Use for             | Name             | Amount | Time      | Alpha acid |
|---------------------|------------------|--------|-----------|------------|
| Boil                | Chinook (USA)    | 46 g   | 20 min    | 11.6 %     |
| Aroma (end of boil) | Amarillo (USA)   | 20 g   | 0 min     | 8.7 %      |
| Aroma (end of boil) | Simcoe (USA)     | 20 g   | 0 min     | 13.2 %     |
| Aroma (end of boil) | Centennial (USA) | 20 g   | 0 min     | 10.2 %     |
| Dry Hop             | Citra (USA)      | 20 g   | 14 day(s) | 13.7 %     |
| Dry Hop             | Simcoe (USA)     | 20 g   | 14 day(s) | 13.2 %     |
| Dry Hop             | Amarillo (USA)   | 20 g   | 14 day(s) | 8.7 %      |
| Dry Hop             | Mosaic (USA)     | 20 g   | 14 day(s) | 12 %       |
| Dry Hop             | Citra (USA)      | 30 g   | 2 day(s)  | 13.7 %     |
| Dry Hop             | Simcoe (USA)     | 30 g   | 2 day(s)  | 13.2 %     |

|         |                |      |          |       |
|---------|----------------|------|----------|-------|
| Dry Hop | Amarillo (USA) | 30 g | 2 day(s) | 8.7 % |
| Dry Hop | Mosaic (USA)   | 30 g | 2 day(s) | 12 %  |

## Yeasts

| Name         | Type | Form  | Amount | Laboratory |
|--------------|------|-------|--------|------------|
| Safeale S-33 | Ale  | Slant | 200 ml | Fermentis  |