

# mój atak chmielu

- Gravity **13.8 BLG**
- ABV ---
- IBU **71**
- SRM **8.2**
- Style **English IPA**

## 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 **14.4 liter(s)**
- Total mash volume **19.2 liter(s)**

## Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **14.4 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **15.7 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

| Type  | Name                      | Amount         | Yield | EBC |
|-------|---------------------------|----------------|-------|-----|
| Grain | Weyermann - Pale Ale Malt | 4.5 kg (93.8%) | 85 %  | 7   |
| Grain | Caraamber                 | 0.3 kg (6.3%)  | 75 %  | 59  |

## Hops

| Use for             | Name                   | Amount | Time   | Alpha acid |
|---------------------|------------------------|--------|--------|------------|
| Boil                | Columbus/Tomahawk/Zeus | 20 g   | 60 min | 15.5 %     |
| Boil                | Admiral                | 5 g    | 60 min | 14.3 %     |
| Boil                | Flyer                  | 5 g    | 60 min | 9.8 %      |
| Aroma (end of boil) | English Golding        | 10 g   | 10 min | 4.8 %      |
| Aroma (end of boil) | Admiral                | 25 g   | 10 min | 14.3 %     |
| Aroma (end of boil) | Flyer                  | 10 g   | 10 min | 9.8 %      |
| Whirlpool           | Cascade                | 15 g   | 30 min | 6 %        |
| Whirlpool           | English Golding        | 20 g   | 30 min | 4.8 %      |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 11.5 g | Safale     |