

# Black Jack

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **61**
- SRM **22.5**
- Style **Black IPA**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.8 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **26.2 liter(s)**

## Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **3.1 liter(s) / kg**
- Mash size **19.7 liter(s)**
- Total mash volume **26.1 liter(s)**

## Steps

- Temp **52 C**, Time **15 min**
- Temp **67 C**, Time **50 min**
- Temp **72 C**, Time **10 min**

## Mash step by step

- Heat up **19.7 liter(s)** of strike water to **57.2C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **50 min** at **67C**
- Keep mash **10 min** at **72C**
- Sparge using **12.9 liter(s)** of **76C** water or to achieve **26.2 liter(s)** of wort

## Fermentables

| Type  | Name                   | Amount         | Yield  | EBC |
|-------|------------------------|----------------|--------|-----|
| Grain | Viking Pale Ale malt   | 3.9 kg (61.2%) | 80 %   | 5   |
| Grain | Strzegom Wiedeński     | 1 kg (15.7%)   | 79 %   | 10  |
| Grain | Viking Pilsner malt    | 0.5 kg (7.8%)  | 82 %   | 4   |
| Grain | Pszeniczny (śrutowany) | 0.2 kg (3.1%)  | 85 %   | 4   |
| Grain | Crystal 150            | 0.2 kg (3.1%)  | 75 %   | 150 |
| Grain | Special B Malt         | 0.15 kg (2.4%) | 65.2 % | 315 |
| Grain | Czekoladowy            | 0.3 kg (4.7%)  | 60 %   | 788 |
| Grain | Płatki owsiane         | 0.08 kg (1.3%) | 60 %   | 3   |
| Grain | Jęczmień palony        | 0.04 kg (0.6%) | 55 %   | 985 |

## Hops

| Use for | Name                        | Amount | Time   | Alpha acid |
|---------|-----------------------------|--------|--------|------------|
| Boil    | Magnum                      | 25 g   | 60 min | 11 %       |
| Boil    | Magnum                      | 10 g   | 30 min | 11 %       |
| Boil    | Magnat (szyszka)            | 35 g   | 15 min | 11.2 %     |
| Boil    | Lublin (Lubelski) (szyszka) | 20 g   | 15 min | 4 %        |

|                     |          |      |          |        |
|---------------------|----------|------|----------|--------|
| Aroma (end of boil) | Palisade | 28 g | 5 min    | 7.1 %  |
| Dry Hop             | Citra    | 20 g | 3 day(s) | 13.3 % |

## Yeasts

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