

# czarna dupa

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **36**
- SRM **32.9**
- Style **American Stout**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.2 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **26.3 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **75 C**, Time **10 min**

## Mash step by step

- Heat up **20 liter(s)** of strike water to **75.5C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **75C**
- Sparge using **12.7 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

## Fermentables

| Type  | Name                       | Amount         | Yield | EBC  |
|-------|----------------------------|----------------|-------|------|
| Grain | Strzegom Pilzneński        | 4 kg (64%)     | 80 %  | 4    |
| Grain | Żytni                      | 1.5 kg (24%)   | 85 %  | 8    |
| Grain | Strzegom Czekoladowy jasny | 0.2 kg (3.2%)  | 68 %  | 400  |
| Grain | Jęczmień palony            | 0.35 kg (5.6%) | 55 %  | 1400 |
| Grain | Strzegom Karmel 300        | 0.2 kg (3.2%)  | 70 %  | 299  |

## Hops

| Use for   | Name       | Amount | Time     | Alpha acid |
|-----------|------------|--------|----------|------------|
| Boil      | Marynka    | 30 g   | 60 min   | 10 %       |
| Boil      | Centennial | 30 g   | 5 min    | 10.5 %     |
| Whirlpool | Citra      | 10 g   | 0 min    | 12 %       |
| Dry Hop   | Citra      | 30 g   | 3 day(s) | 12 %       |

## Yeasts

| Name         | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale  | Dry  | 11.5 g | Fermentis  |