

# Żytni Stout z ziarnami kakaowca

- Gravity **15.2 BLG**
- ABV **6.3 %**
- IBU **32**
- SRM **36.9**
- Style **Dry Stout**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **26.4 liter(s)**

## Steps

- Temp **48 C**, Time **15 min**
- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **19.8 liter(s)** of strike water to **52.7C**
- Add grains
- Keep mash **15 min** at **48C**
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **15.8 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

| Type  | Name                                   | Amount         | Yield | EBC  |
|-------|----------------------------------------|----------------|-------|------|
| Grain | Weyermann - Pale Ale Malt              | 2.5 kg (37.9%) | 85 %  | 7    |
| Grain | Weyermann - Rye Malt                   | 2 kg (30.3%)   | 85 %  | 7    |
| Grain | Monachijski typ II 20-25 EBC Weyermann | 1 kg (15.2%)   | 80 %  | 20   |
| Grain | Carafa III                             | 0.5 kg (7.6%)  | 70 %  | 1034 |
| Grain | Weyermann - Chocolate Rye              | 0.3 kg (4.5%)  | 20 %  | 493  |
| Grain | Fawcett - Pale Chocolate               | 0.3 kg (4.5%)  | 71 %  | 600  |

## Hops

| Use for | Name              | Amount | Time   | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil    | Marynka           | 30 g   | 60 min | 10 %       |
| Boil    | Lublin (Lubelski) | 30 g   | 20 min | 4 %        |

## Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

|       |     |       |        |     |
|-------|-----|-------|--------|-----|
| US-05 | Ale | Slant | 100 ml | --- |
|-------|-----|-------|--------|-----|

### Extras

| Type   | Name            | Amount | Use for   | Time      |
|--------|-----------------|--------|-----------|-----------|
| Flavor | Ziarna kakaowca | 150 g  | Secondary | 14 day(s) |

### Notes

- Ziarna kakaowca kruszone, prażone w piekarniku 100C, 10 min.  
Odtłuszczone na papierze. Macerowane w rumie.  
*Feb 1, 2019, 4:35 PM*