

# PAPA

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **37**
- SRM **5.4**
- Style **American Pale Ale**

## Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **7 %**
- Size with trub loss **12.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.4 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **10.5 liter(s)**
- Total mash volume **14 liter(s)**

## Steps

- Temp **52 C**, Time **7 min**
- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **0 min**

## Mash step by step

- Heat up **10.5 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **7 min** at **52C**
- Keep mash **45 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **15.4 liter(s)** of wort

## Fermentables

| Type  | Name                        | Amount         | Yield | EBC |
|-------|-----------------------------|----------------|-------|-----|
| Grain | Viking Pale Ale malt        | 3 kg (85.7%)   | 80 %  | 5   |
| Grain | Strzegom Monachijski typ II | 0.4 kg (11.4%) | 79 %  | 22  |
| Grain | Pszeniczny                  | 0.1 kg (2.9%)  | 85 %  | 4   |

## Hops

| Use for             | Name     | Amount | Time   | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil                | lunga    | 10 g   | 30 min | 11 %       |
| Aroma (end of boil) | Zula     | 15 g   | 20 min | 8.3 %      |
| Aroma (end of boil) | Zula     | 15 g   | 7 min  | 8.3 %      |
| Boil                | Książęcy | 10 g   | 7 min  | 7 %        |
| Whirlpool           | Zula     | 25 g   | 0 min  | 8.3 %      |
| 30min 80°C          |          |        |        |            |
| Whirlpool           | Książęcy | 15 g   | 0 min  | 7 %        |
| 30min 80°C          |          |        |        |            |
| Whirlpool           | Tomyski  | 15 g   | 0 min  | 2.8 %      |

30min 80°C

## Yeasts

| Name        | Type | Form  | Amount | Laboratory |
|-------------|------|-------|--------|------------|
| Safale S-04 | Ale  | Slant | 300 ml | Safale     |