

# Freak Lemon Daro

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **22**
- SRM **3.8**
- Style **American Wheat or Rye Beer**

## Batch size

- Expected quantity of finished beer **28 liter(s)**
- Trub loss **5 %**
- Size with trub loss **29.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **32.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.9 liter(s)**
- Total mash volume **25.2 liter(s)**

## Steps

- Temp **44 C**, Time **15 min**
- Temp **63 C**, Time **45 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **18.9 liter(s)** of strike water to **48C**
- Add grains
- Keep mash **15 min** at **44C**
- Keep mash **45 min** at **63C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **19.7 liter(s)** of **76C** water or to achieve **32.3 liter(s)** of wort

## Fermentables

| Type  | Name       | Amount         | Yield | EBC |
|-------|------------|----------------|-------|-----|
| Grain | Pszeniczny | 2.5 kg (39.7%) | 85 %  | 4   |
| Grain | Pilzneński | 3.5 kg (55.6%) | 81 %  | 4   |
| Grain | Karmelowy  | 0.3 kg (4.8%)  | 80 %  | 16  |

## Hops

| Use for | Name       | Amount | Time   | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil    | Challenger | 20 g   | 60 min | 7 %        |
| Boil    | Cascade    | 25 g   | 15 min | 6 %        |
| Boil    | Centennial | 25 g   | 5 min  | 10.5 %     |

## Yeasts

| Name | Type  | Form | Amount | Laboratory |
|------|-------|------|--------|------------|
| K-97 | Wheat | Dry  | 11 g   | Fermentis  |

## Extras

| Type | Name | Amount | Use for | Time |
|------|------|--------|---------|------|
|------|------|--------|---------|------|

|        |                 |       |           |          |
|--------|-----------------|-------|-----------|----------|
| Spice  | skórka cytryny  | 50 g  | Mash      | 15 min   |
| Flavor | sok z cytryny   | 300 g | Secondary | 5 day(s) |
| Other  | kwask fosforowy | 25 g  | Boil      | 1 min    |

## Notes

- 300 g soku to około 6 cytryn  
do zakwaszenia brzeczki dodać kwas fosforowy po gotowaniu  
*Feb 25, 2023, 1:21 PM*