

#4_20_Patriot

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **40**
- SRM **5.5**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **78 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.3 liter(s)**
- Total mash volume **21 liter(s)**

Steps

- Temp **64 C**, Time **20 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **16.3 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **20 min** at **64C**
- Keep mash **40 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|----------------|--------|-----|
| Grain | Briess - Pilsen Malt | 2.5 kg (53.5%) | 80.5 % | 3 |
| Grain | Munich Malt | 0.9 kg (19.3%) | 80 % | 15 |
| Grain | Briess - Vienna Malt | 1 kg (21.4%) | 77.5 % | 9 |
| Grain | Weyermann - Melanoiden Malt | 0.27 kg (5.8%) | 81 % | 53 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|------------|----------|--------|--------|------------|
| First Wort | Puławski | 25 g | 20 min | 7.6 % |
| Boil | Izabella | 20 g | 20 min | 5.1 % |
| Boil | Puławski | 15 g | 5 min | 7.6 % |
| Whirlpool | Izabella | 40 g | 20 min | 5.1 % |
| Whirlpool | Puławski | 40 g | 20 min | 7.6 % |

Yeasts

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

Extras

| Type | Name | Amount | Use for | Time |
|--------|-----------|--------|---------|--------|
| Fining | Whirlfloc | 1.5 g | Boil | 10 min |