

4 Pines Pale Ale clone 45 IBU

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **45**
- SRM **6.4**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **62 min**
- Evaporation rate **10 %/h**
- Boil size **29.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **20.1 liter(s)**
- Total mash volume **25.9 liter(s)**

Steps

- Temp **67 C**, Time **60 min**

Mash step by step

- Heat up **20.1 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **29.1 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|----------------|-------|-----|
| Grain | Briess - Pale Ale Malt | 4.5 kg (78.3%) | 80 % | 7 |
| Grain | White Wheat Malt | 0.5 kg (8.7%) | 86 % | 4 |
| Grain | Munich Malt | 0.5 kg (8.7%) | 80 % | 18 |
| Grain | Caramel/Crystal Malt - 40L | 0.25 kg (4.3%) | 74 % | 79 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|----------|--------|----------|------------|
| Boil | Simcoe | 25 g | 40 min | 13.2 % |
| Boil | Citra | 25 g | 10 min | 12 % |
| Boil | Cascade | 25 g | 5 min | 6 % |
| Boil | Amarillo | 25 g | 5 min | 9.5 % |
| Whirlpool | Citra | 10 g | 30 min | 12 % |
| Dry Hop | Citra | 15 g | 4 day(s) | 12 % |
| Dry Hop | Cascade | 15 g | 4 day(s) | 6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------|------|-------|--------|------------|
| US-05 | Ale | Slant | 200 ml | Safale |

Extras

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

| Type | Name | Amount | Use for | Time |
|-------------|------------------|--------|---------|--------|
| Water Agent | Whirlfloc Tablet | 5 g | Mash | 15 min |