

## IPA v21 #149

- Gravity **16.4 BLG**
- ABV **6.9 %**
- IBU **65**
- SRM **6.1**
- Style **American IPA**

### Batch size

- Expected quantity of finished beer **20.2 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.2 liter(s)**
- Boil time **70 min**
- Evaporation rate **19.4 %/h**
- Boil size **26.2 liter(s)**

### Mash information

- Mash efficiency **82.9 %**
- Liquor-to-grist ratio **2.68 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20.6 liter(s)**

### Steps

- Temp **65 C**, Time **60 min**
- Temp **72 C**, Time **20 min**
- Temp **77 C**, Time **7 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **73.4C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **20 min** at **72C**
- Keep mash **7 min** at **77C**
- Sparge using **16.8 liter(s)** of **76C** water or to achieve **26.2 liter(s)** of wort

### Fermentables

| Type  | Name                    | Amount         | Yield | EBC |
|-------|-------------------------|----------------|-------|-----|
| Grain | pilzneński - viking     | 2.5 kg (44.6%) | 80 %  | 3.6 |
| Grain | pale ale - viking       | 1.3 kg (23.2%) | 80 %  | 5.5 |
| Grain | płatki owsiane          | 0.3 kg (5.4%)  | 83 %  | 3   |
| Grain | pszeniczny - bestmalz   | 0.3 kg (5.4%)  | 82 %  | 5   |
| Grain | wiedeński - viking      | 0.4 kg (7.1%)  | 79 %  | 8.6 |
| Grain | monachijski II - viking | 0.4 kg (7.1%)  | 79 %  | 22  |
| Grain | karmelowy30 - viking    | 0.3 kg (5.4%)  | 73 %  | 30  |
| Grain | biscuit - chateau       | 0.1 kg (1.8%)  | 77 %  | 50  |

### Hops

| Use for             | Name     | Amount | Time   | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil                | Warrior  | 16 g   | 60 min | 14.7 %     |
| Boil                | Columbus | 20 g   | 15 min | 13.9 %     |
| Aroma (end of boil) | Simcoe   | 15 g   | 5 min  | 12.9 %     |
| Aroma (end of boil) | Strata   | 20 g   | 5 min  | 15.1 %     |

|                     |        |        |       |        |
|---------------------|--------|--------|-------|--------|
| Aroma (end of boil) | Citra  | 20 g   | 5 min | 13.8 % |
| Aroma (end of boil) | Galaxy | 20 g   | 5 min | 15.9 % |
| Aroma (end of boil) | Mosaic | 23.5 g | 5 min | 9.5 %  |

## Yeasts

| Name                           | Type | Form  | Amount | Laboratory |
|--------------------------------|------|-------|--------|------------|
| WLP090 - San Diego Super Yeast | Ale  | Slant | 175 ml | White Labs |
| 30-dniowa gęstwa               |      |       |        |            |

## Extras

| Type        | Name                  | Amount | Use for  | Time   |
|-------------|-----------------------|--------|----------|--------|
| Water Agent | gips                  | 3 g    | Mash     | ---    |
| Water Agent | kwas mlekowy 80% [ml] | 4.49 g | Mash     | ---    |
| Water Agent | chlorek wapnia [ml]   | 0 g    | Mash     | ---    |
| Water Agent | epsom                 | 0.5 g  | Mash     | ---    |
| Water Agent | mech irlandzki        | 3 g    | Boil     | 15 min |
| Water Agent | kwask askorbinowy     | 4 g    | Bottling | ---    |