

# FES Palo Santo

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- Gravity **18.2 BLG**
- ABV **7.8 %**
- IBU **50**
- SRM **33.9**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **65 min**
- Evaporation rate **15 %/h**
- Boil size **29.5 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24.6 liter(s)**
- Total mash volume **32.8 liter(s)**

## Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **24.6 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **13.1 liter(s)** of **76C** water or to achieve **29.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5 kg (61%)	80 %	5
Grain	Viking Pilsner malt	2.3 kg (28%)	82 %	4
Grain	Caraaroma	0.2 kg (2.4%)	78 %	400
Grain	Weyermann - Carafa I	0.3 kg (3.7%)	70 %	690
Grain	Jęczmień palony	0.2 kg (2.4%)	55 %	985
Grain	Strzegom Czekoladowy 1200	0.2 kg (2.4%)	68 %	1202

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings	90 g	60 min	5.1 %
Boil	Fuggles	30 g	35 min	4.5 %
Boil	Styrian Golding	30 g	15 min	3.6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale

## Extras

Type	Name	Amount	Use for	Time
Other	Palo santo	50 g	Secondary	14 day(s)

## Notes

- Brzeczka zadana starterem Safale S-04 . Fermentacja 7 dni w temperaturze około 21C, fermentacja cicha 2 tygodnie w tej samej temperaturze.  
*Oct 16, 2018, 5:14 PM*