

Dunkelweizen

Yeast Pitch Rate Effects

On Wyeast 3068 - Weihenstephan Weizen

Under-Pitching

Increasing Ester Production (Banana)

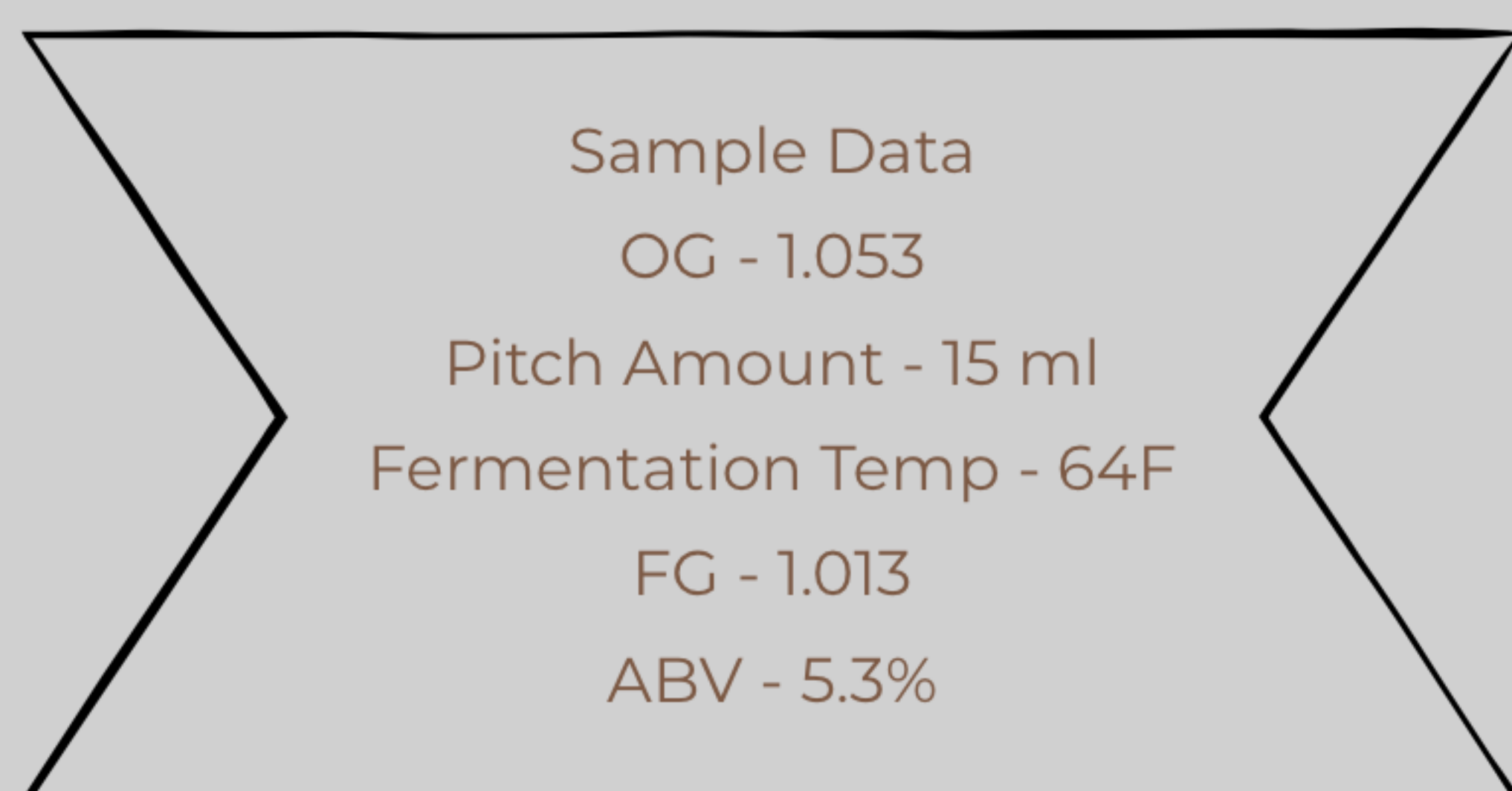
Decreasing the pitch rate will contribute to increased ester production, yielding more banana notes to the beer.

Additional ester production can be achieved by increasing the fermentation temperature and increasing the wort density.

Concerns When Under-Pitching

A low pitch rate can lead to:

- Excess levels of diacetyl
- Increase in higher/fusel alcohol formation
- Increase in ester formation
- Increase in volatile sulfur compounds
- High terminal gravities
- Stuck fermentations
- Increased risk of infection



Sample Data
OG - 1.053
Pitch Amount - 15 ml
Fermentation Temp - 64F
FG - 1.013
ABV - 5.3%

Sample Tasting Notes:

The classic and most popular German wheat beer strain used worldwide. This yeast strain produces a balance of banana esters and clove phenolics. You can manipulate the balance towards ester production or phenolic production to your desire with an easy trick, changing your pitch rate.

Sulfur is commonly produced by this strain, but will dissipate with conditioning. This strain will remain in suspension for an extended amount of time following attenuation. For truly clear beer, filtering is required; however, filtering can also reduce the amount of esters and phenolics in the finished beer.

Over-Pitching

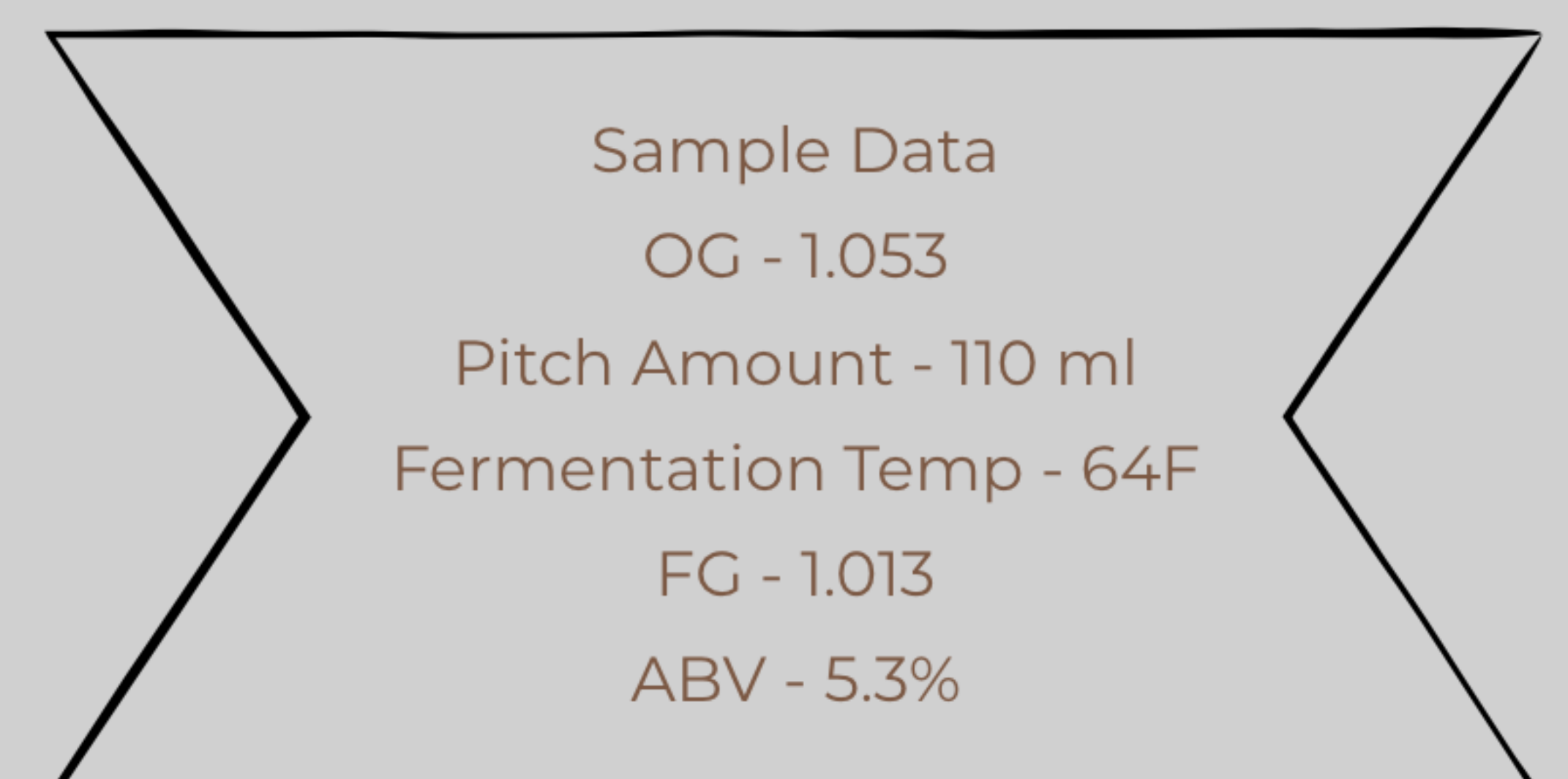
Increasing Phenolics Production (Clove)

Over pitching can result in a near complete loss of banana character. Decreasing the ester level will allow a higher clove character to be perceived.

Concerns When Over-Pitching

High pitch rates can lead to:

- Very low ester production
- Very fast fermentations
- Thin or lacking body/mouthfeel
- Autolysis (Yeasty flavors due to lysing of cells)



Sample Data
OG - 1.053
Pitch Amount - 110 ml
Fermentation Temp - 64F
FG - 1.013
ABV - 5.3%

Sample Tasting Notes: