# Fast Wort Souring with Lactobacillus, Your Friend

## No Cross-Contamination - Minimal Equipment

# Benefits of FAst Wort Souring

- <u>It's Fast</u>: Adds only a day or two to the process from grain to glass.
- <u>It's Safe</u>: You can boil the sour wort and remove risk of cross-contamination with other equipment.

- <u>It's Predictable</u>: Outcome is *easier to control* than with traditional methods
- <u>It's Possible</u>:  You likely have all the equipment you need to succeed!

# Required Equipment

1. Stainless Steel Corny Keg
2. CO2 System
3. Fermentation Heater
4. Replacement O-Ring Set
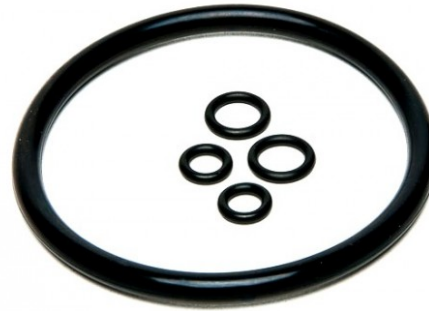
# Guidelines

# 0. Pasteurize If You Want

- Keep other bacteria from having a chance and pasteurize before pitching your lacto.
- 165F for 10 minutes should do the trick.
- Mash out temperature also should suffice.

# 1. Chill to Lacto Pitch Temp

- Chill to at least 120F, lacto will die above that temperature.
- Make sure chiller was sanitized, they tend to harbor a high bacterial load.

# 2. No Oxygen or Aeration

- We want anaerobic fermentation conditions for lactobacillus, not aerobic conditions which can promote the growth of nasty bugs.
- Do not aerate or splash wort on the way to lactic fermentation in keg.
- Purge headspace with CO2 whenever necessary, such as after pitching or taking pH sample.

# 3. Start with Lower pH

- Lactobacillus is a potent proteolytic fermenter.
- This tendency is lowered if you only sour ferment below around 4.5–4.8 pH.
- Add Lactic Acid to bring down the pH.
- This step isn't critical, but something to keep in mind.

# 4. Maintain The Heat

- Lactobacillus grows well above 100F, but starts to die around 122F
- Other bugs, if present, may thrive if the temperature is kept low enough.
- Try to maintain somewhere between 110-120F

# 5. Things Get Foamy

- If using a heterofermentative strain like l. brevis, a lot of $CO_2$ will be generated.
- If allowed to build up, this could make a mess when trying to open the keg.
- Once positive pressure is noticed, pull pressure release valve and set in the "open" position.

# 6. Boil At Proper pH

- Depending on the style you're brewing, the pH you want to attain will vary.
- Once you reach the desired pH, you should boil or pasteurize to halt the souring.
- Just remember that if you plan to ferment the sour wort with yeast afterward, the yeast won't perform well under 3.4 pH
- Most lactic beers should end above 3.4 pH, so it usually isn't a problem.

# 7. Pitch More Yeast

- The yeast may not create as many new cells in the low pH environment, so pitch more yeast.
- Calculate as if no cell growth will occur, and pitch around 2-4 times as many cells for the gravity.

# Lactic Beers

# Some Lactic Beer Styles to try

- Berliner Weisse
  - 30-60% Wheat Malt, rest Pilsner Malt, 5 BUs
- Gose
  - 50:40:10 Wheat:Pilsner:Munich Malts, salt, coriander, 5 BUs
- Lichtenhainer
  - 50:50 Wheat Malt and Rauchmalz (Beechwood Smoked), 5 BUs
- Traditional Witbier
- Tart Saison
- Whatever you feel like (Lactic IPA? LIPA?)

# Berliner Weisse Recipe

5lb Pilsner Malt

4lb Wheat Malt

1/2lb Acidulated Malt

1/2oz Hallertau 5%AA 15 mins

Gigayeast Fast Souring Lacto to pH 3.6

WLP029 German Ale Yeast

# TL;DR

- Pasteurize wort at 165F for 10 mins
- Lower pH to 4.5 with lactic acid for head (optional)
- Chill to lacto pitching temp (<120F/48C)
- Pitch lacto and purge headspace with CO2
- Ferment at 110-120F/43-48C
- Raise pressure release at positive pressure
- Boil once desired pH is attained
- Ferment with more yeast than usual