

Dip Hopping

Science, Practice,
&
Applications



Ashton "Mr. Wizard" Lewis
RahrBSG Technical Product Manager
BYO Technical Editor

Agenda

1

What is Dip Hopping?

2

What Does it Do for Your Beer?

3

Techniques

4

Alternative & Complimentary Techniques

What is Dip Hopping?

A Funny Name with Real Benefits

- Hop-steeping technique using hot wort (150–175°F or ~65–80°C)
- Hops steep for 30–60 minutes before fermentation
- Releases aroma oils without isomerizing alpha acids
- Produces cleaner, less bitter hop profile

Objectives of Dip Hopping



Bright Hop Character

- Extract bright hop aroma
- Reduce harsh or sulfurous notes
- Maintain clean and balanced hop character

Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Dip Hopping Evolution



2012

Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Dip Hopping Evolution

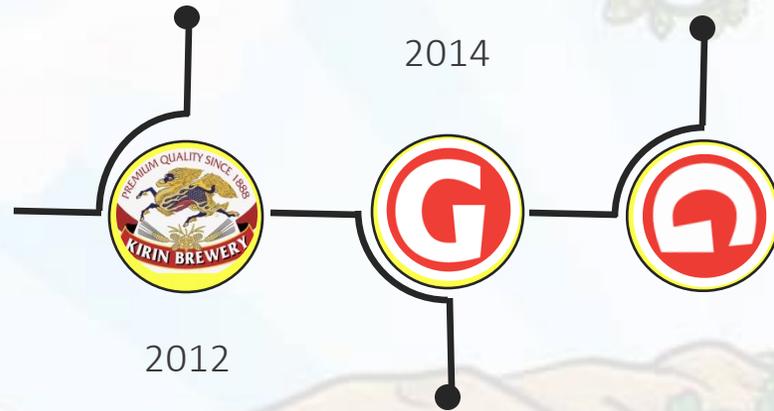


Van Havig and Ben Love of Gigantic Brewing in Portland, Oregon visit Kirin's Spring Valley Brewery and are struck by SVB's 496 IPL

Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Gigantic begins spreading the word about Spring Valley's new method to US brewers

Dip Hopping Evolution

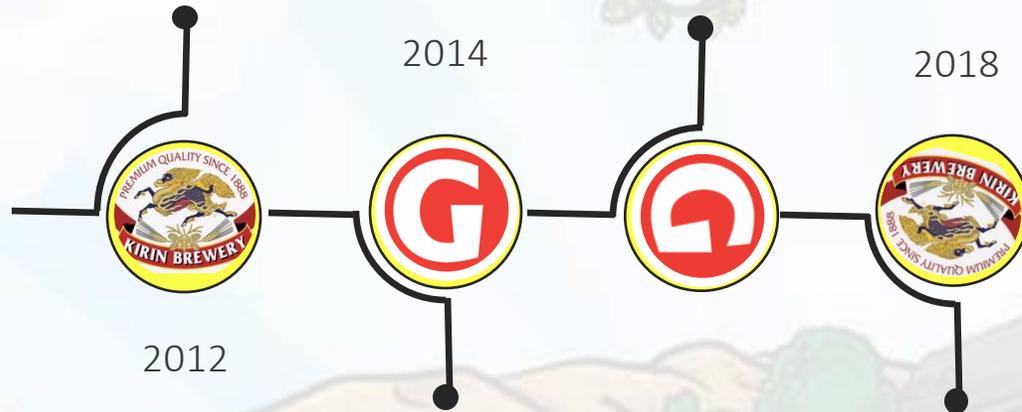


Van Havig and Ben Love of Gigantic Brewing in Portland, Oregon visit Kirin's Spring Valley Brewery and are struck by SVB's 496 IPL

Dip Hopping Evolution

Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Gigantic begins spreading the word about Spring Valley's new method to US brewers



Van Havig and Ben Love of Gigantic Brewing in Portland, Oregon visit Kirin's Spring Valley Brewery and are struck by SVB's 496 IPL

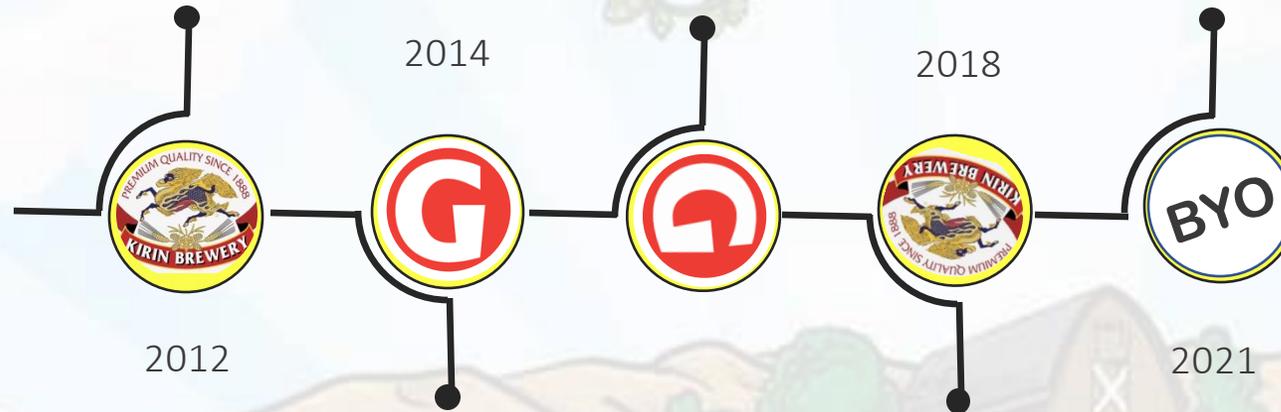
Kirin presents poster about Dip Hopping at the ASBC/MBAA Brewing Summit

Dip Hopping Evolution

Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Gigantic begins spreading the word about Spring Valley's new method to US brewers

John Holl writes article about Dip Hopping in BYO Magazine



Van Havig and Ben Love of Gigantic Brewing in Portland, Oregon visit Kirin's Spring Valley Brewery and are struck by SVB's 496 IPL

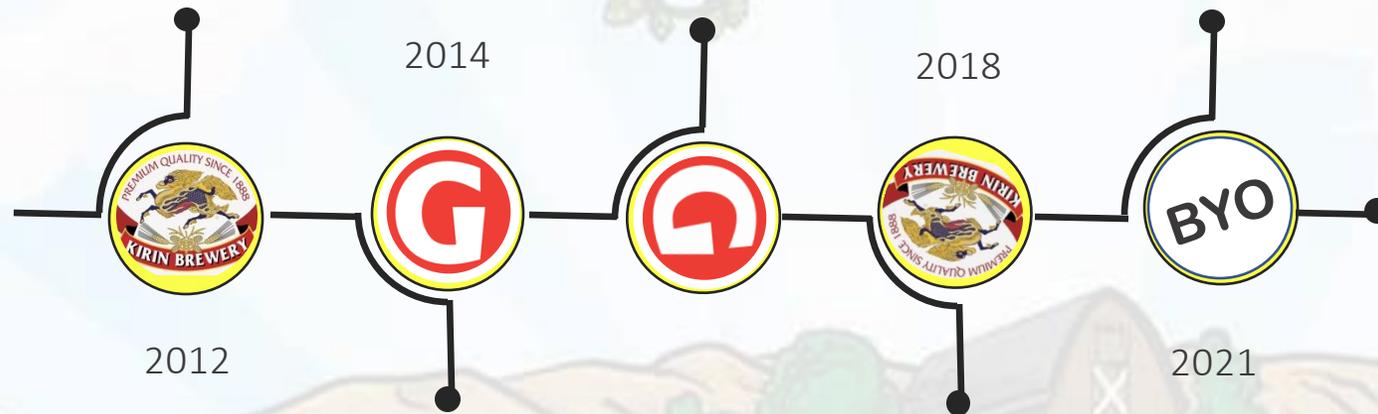
Kirin presents poster about Dip Hopping at the ASBC/MBAA Brewing Summit

Dip Hopping Evolution

Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Gigantic begins spreading the word about Spring Valley's new method to US brewers

John Holl writes article about Dip Hopping in BYO Magazine



2012

2014

2018

2021

Van Havig and Ben Love of Gigantic Brewing in Portland, Oregon visit Kirin's Spring Valley Brewery and are struck by SVB's 496 IPL

Kirin presents poster about Dip Hopping at the ASBC/MBAA Brewing Summit

Homebrewers and consumers are getting hip to dip-hopped beers

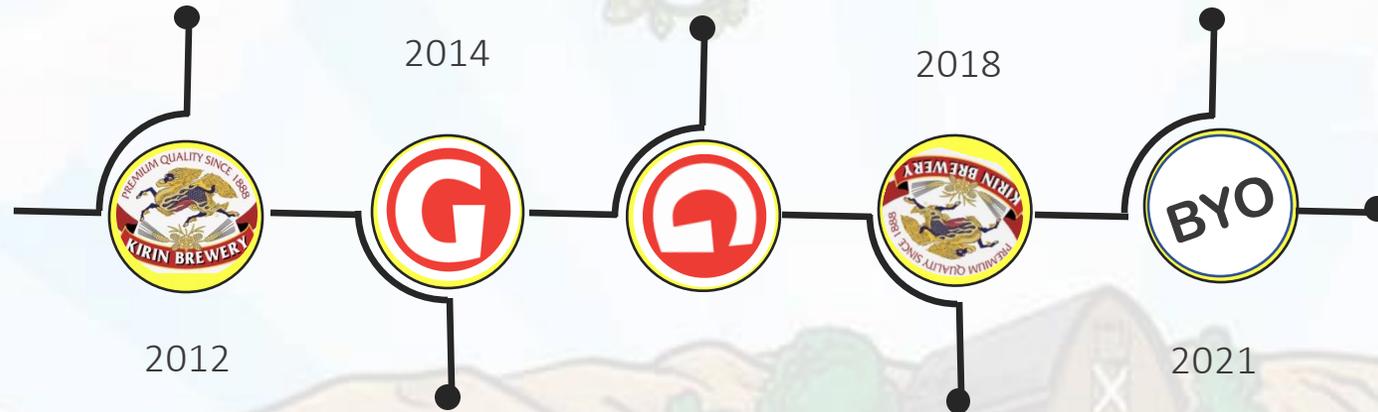


Kirin brewers began talking about a technique that boosts pleasant hop aromas while suppressing off-flavors

Gigantic begins spreading the word about Spring Valley's new method to US brewers

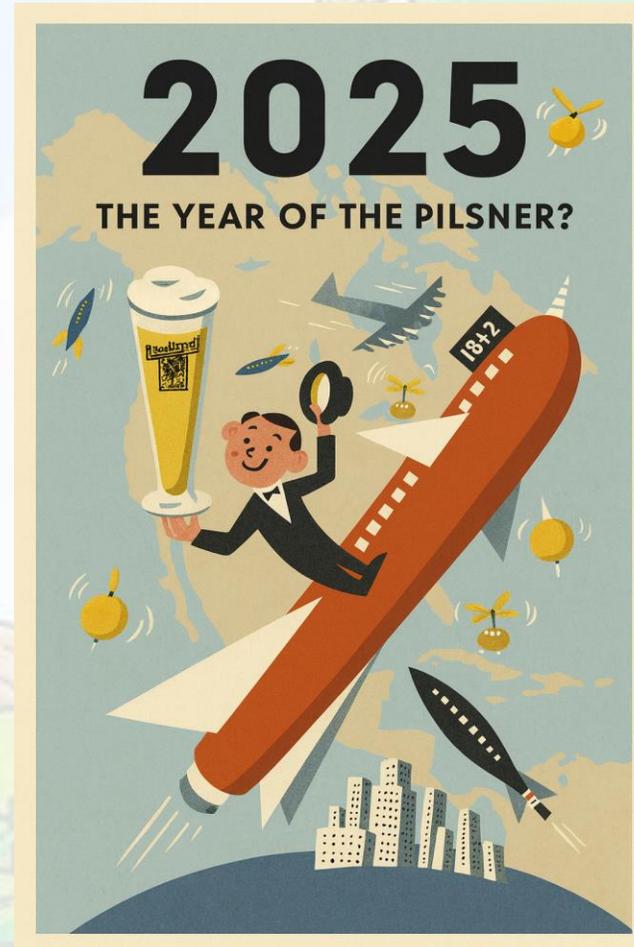
John Holl writes article about Dip Hopping in BYO Magazine

Dip Hopping Evolution



Van Havig and Ben Love of Gigantic Brewing in Portland, Oregon visit Kirin's Spring Valley Brewery and are struck by SVB's 496 IPL

Kirin presents poster about Dip Hopping at the ASBC/MBAA Brewing Summit





Brad Ring is at **Wheatsheaf Hotel**.

March 15 · Adelaide, SA, Australia · 🧑🏻

It is always fun to meet our magazine readers around the world who use our articles to make great beer like the talented brewers at Wheaty Brewing Corps in Adelaide, Australia.

Inspired by a [Brew Your Own magazine](#) story on dip hopping, they used the technique on a wonderful kellerbier served on a Czech side pull faucet. Great lineup of beers brewed by great people in a great setting at the historic Wheatsheaf Hotel. 🇦🇺 🍺



What Dip Hopping Does for Beer?



Bright Hop Character

- Cleaner hop aroma (less onion/garlic)
- Brighter fruit expression (citrus, tropical)
- Reduces H₂S and 2M3MB (onion-like)

What Dip Hopping Does for Beer?



Bright Hop Character

- Cleaner hop aroma (less onion/garlic)
- Brighter fruit expression (citrus, tropical)
- Reduces H₂S and 2M3MB (onion-like)
- Smoother mouthfeel with lower polyphenols
- Reduced bitterness
- Increased precursors for fruity esters
- Promotes oxygenated terpene retention
- Enables yeast biotransformation for fruity esters

Hop Selection Based on Hop Terpene Content

Geraniol-rich Varieties

Aurora
Bravo
Cascade
Centennial
Chinook
Citra
Denali
Mosaic
Motueka
Styrian Golding

Linalool-rich Varieties

Amarillo
Bravo
Cascade
Centennial
Citra
Glacier
Millennium
Mount Hood
Nugget
Pacifica
Willamette



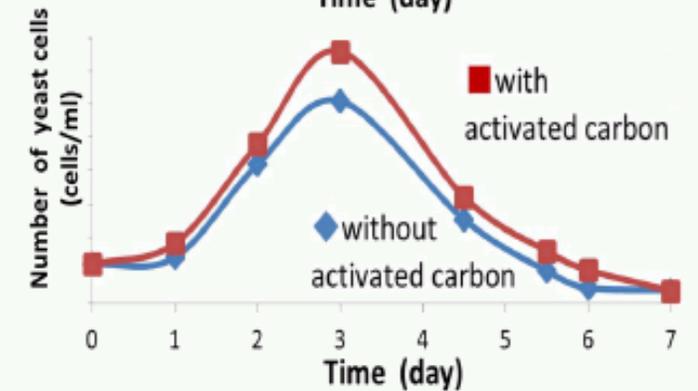
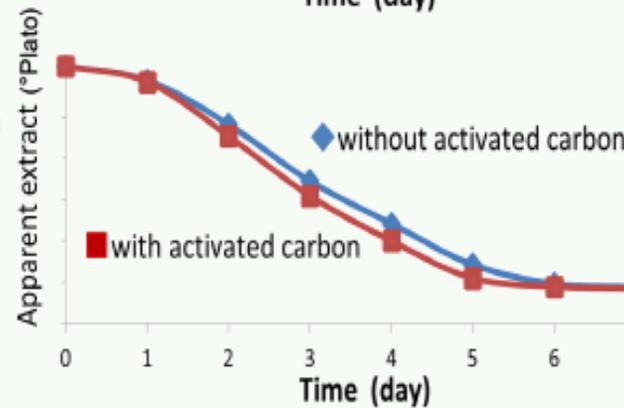
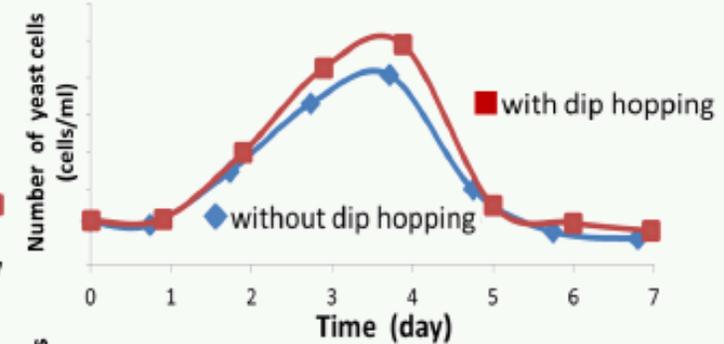
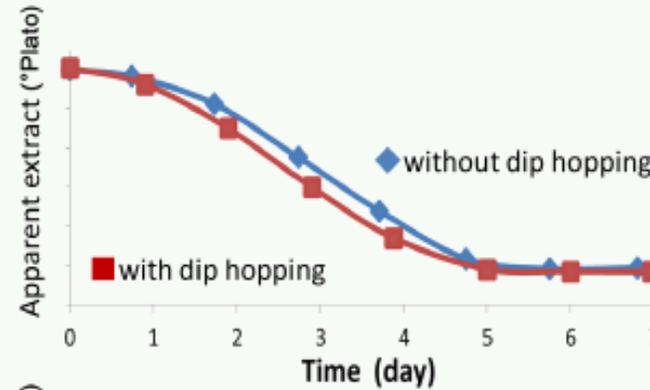
Results of Dip Hopping

Slight increase in fermentation rate and yeast cells in suspension

Dip hopping

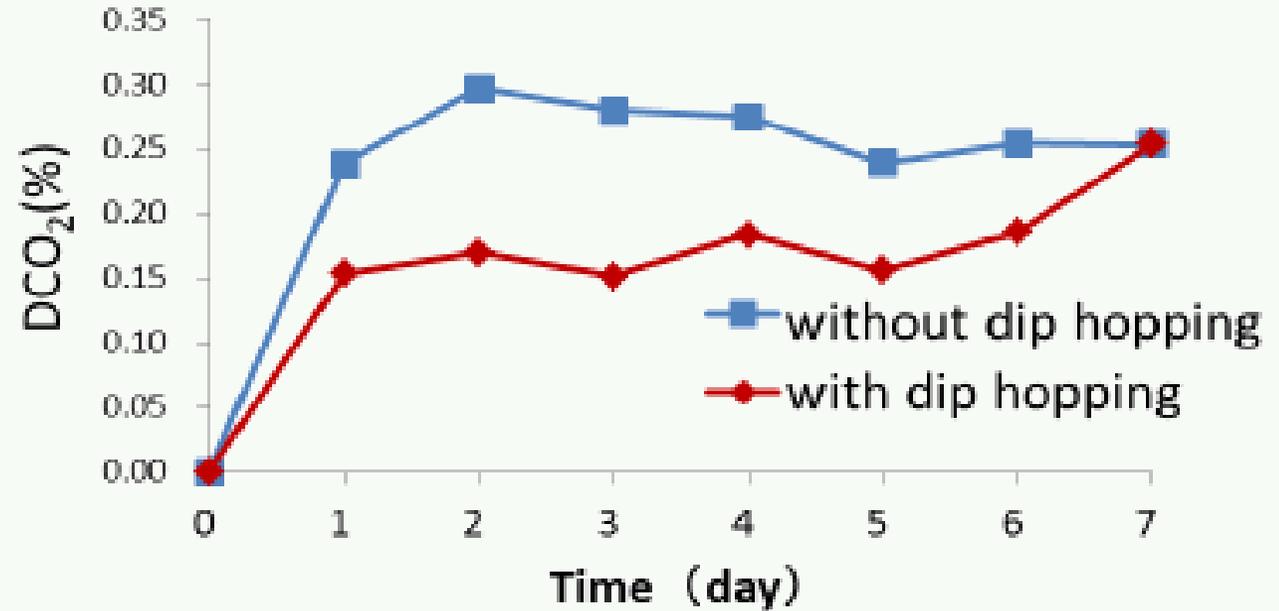


Activated carbon addition



Role of Hop Solids in Sulfur Reduction

- CO₂ nucleation & scrubbing removes volatile sulfur



- Selective volatilization at 65–80°C
- Adsorption of sulfur molecules onto hop solids

Results of Dip Hopping

Change in hop aromatics

A- 127

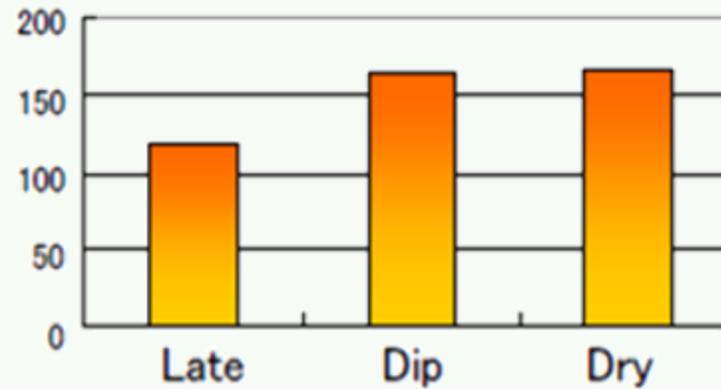
Effect of hops addition to the fermentation tank on beer fermentation

BREWING SUMMIT
SAN DIEGO 2018

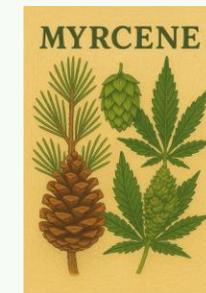
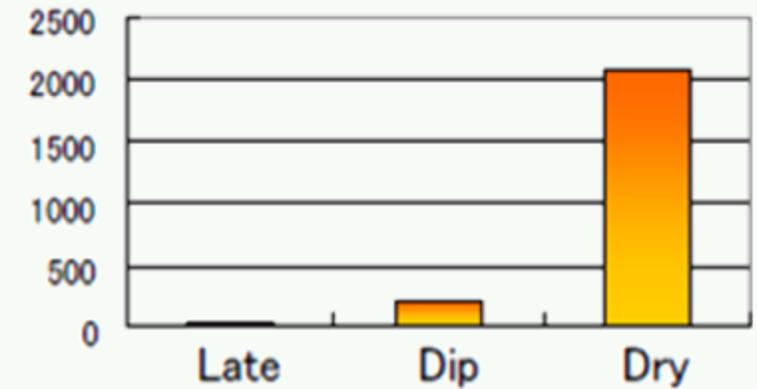
Yuri Tsuchiya, Taku Ota, Hiroyuki Yoshimoto,
Osamu Kobayashi and Hironori Inadome
/ Kirin Company Ltd.



Linalool (ppb)



Myrcene (ppb)



Results of Dip Hopping

Change in hop aromatics

A- 127

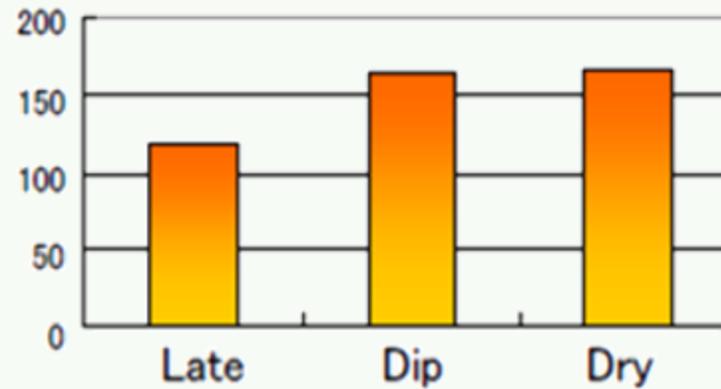
Effect of hops addition to the fermentation tank on beer fermentation

BREWING SUMMIT
SAN DIEGO 2018

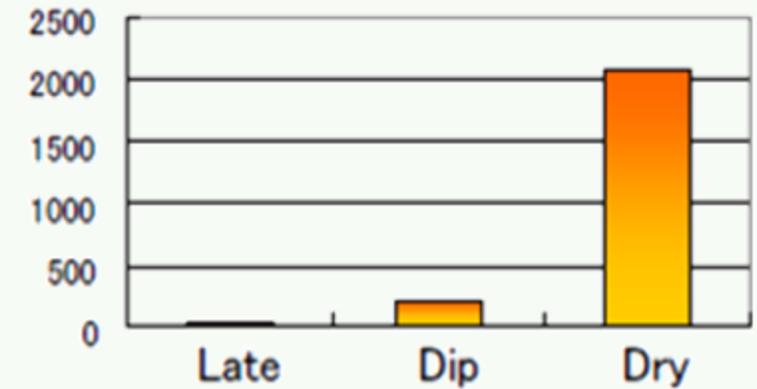
Yuri Tsuchiya, Taku Ota, Hiroyuki Yoshimoto,
Osamu Kobayashi and Hironori Inadome
/ Kirin Company Ltd.



Linalool (ppb)



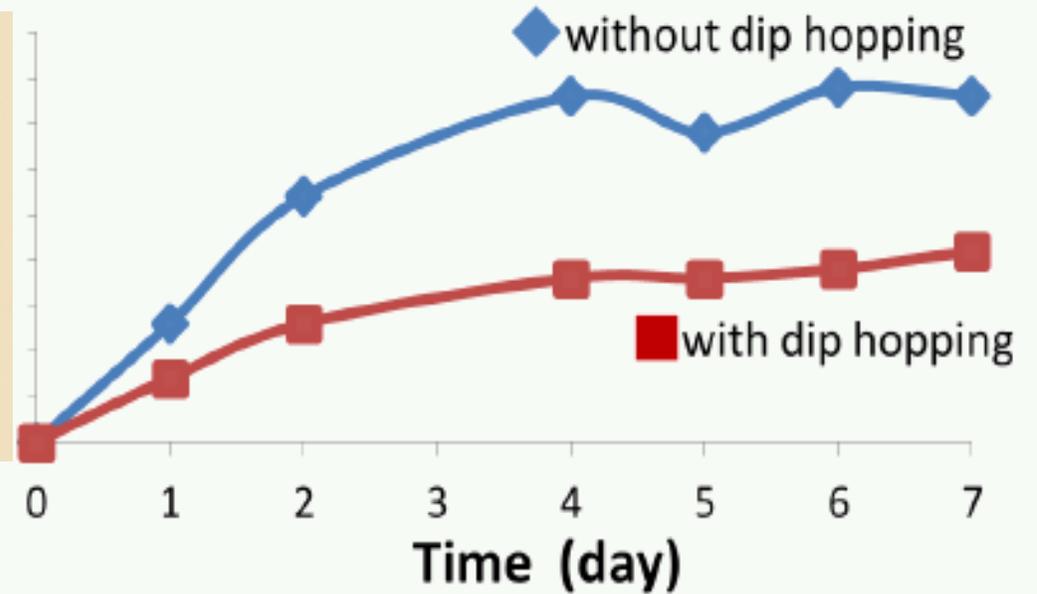
Myrcene (ppb)



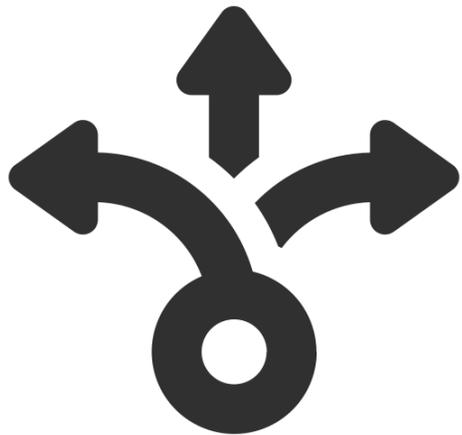


Results of Dip Hopping

Change in hop aromatics

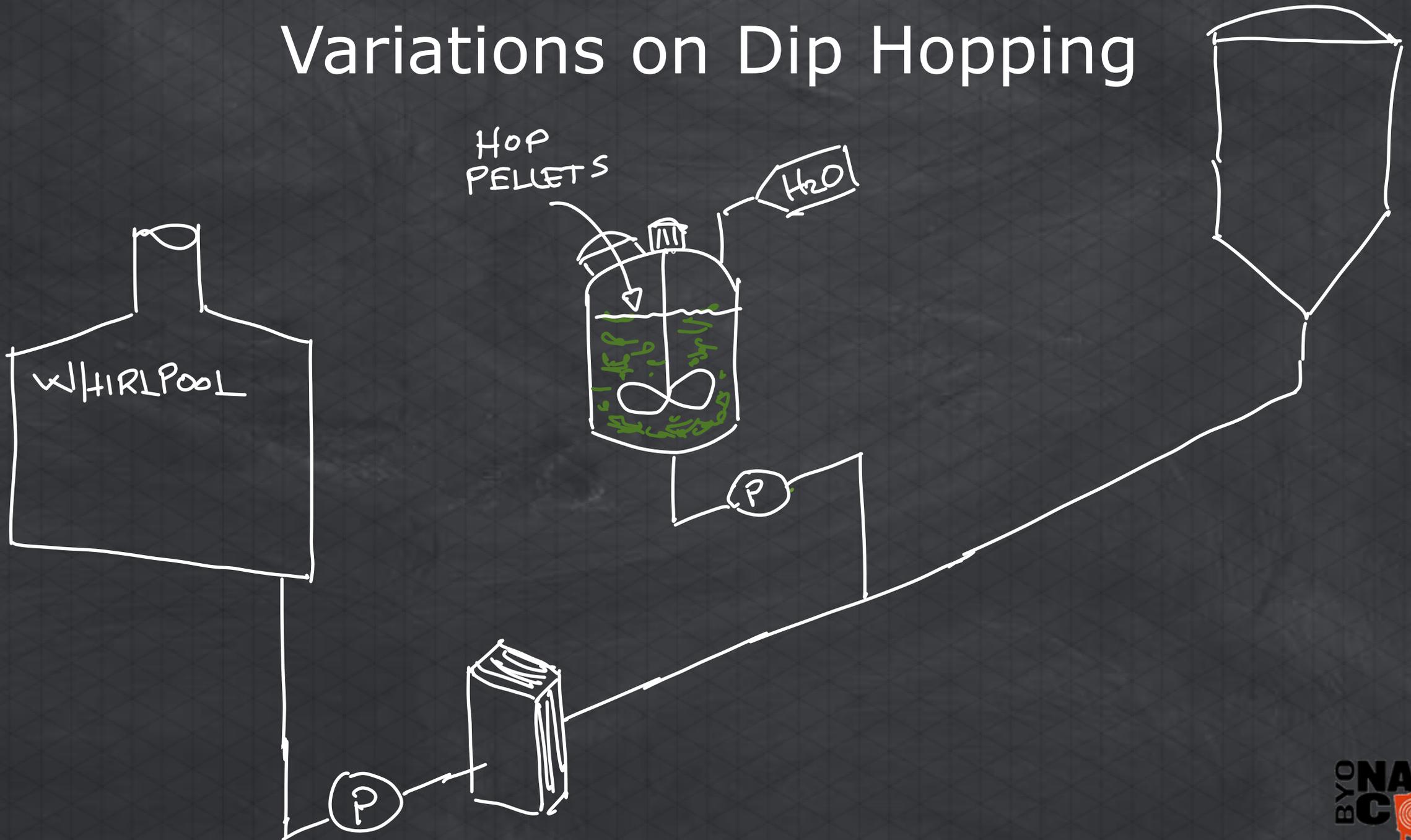


Different Ways to Perform Dip Hopping

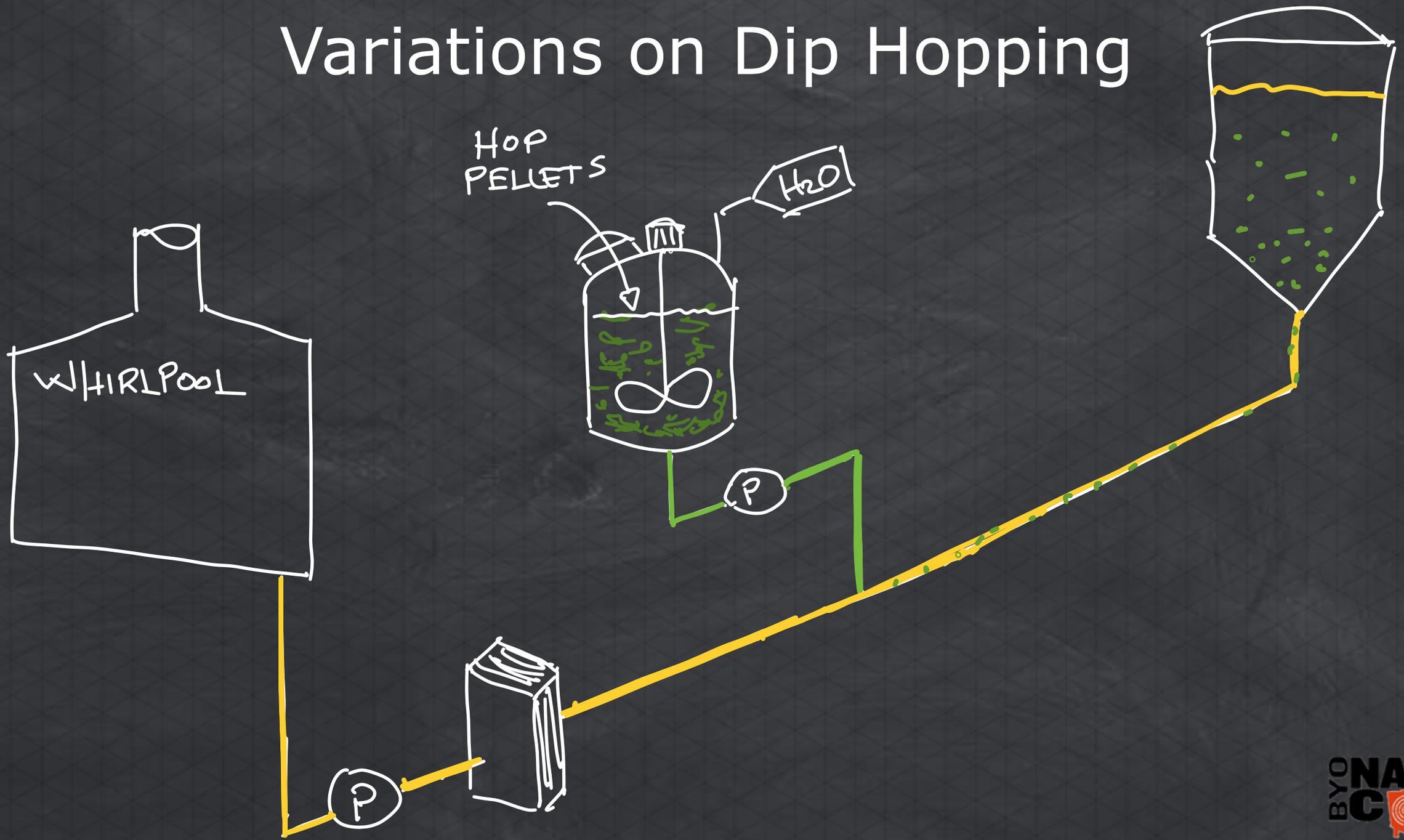


- Separate Vessel Steep (Kirin Method)
- Fermenter Dip Hop
- Low-Temp Whirlpool Variant (lacks hop solids in fermentation)
- Hybrid Dip + Dry Hop

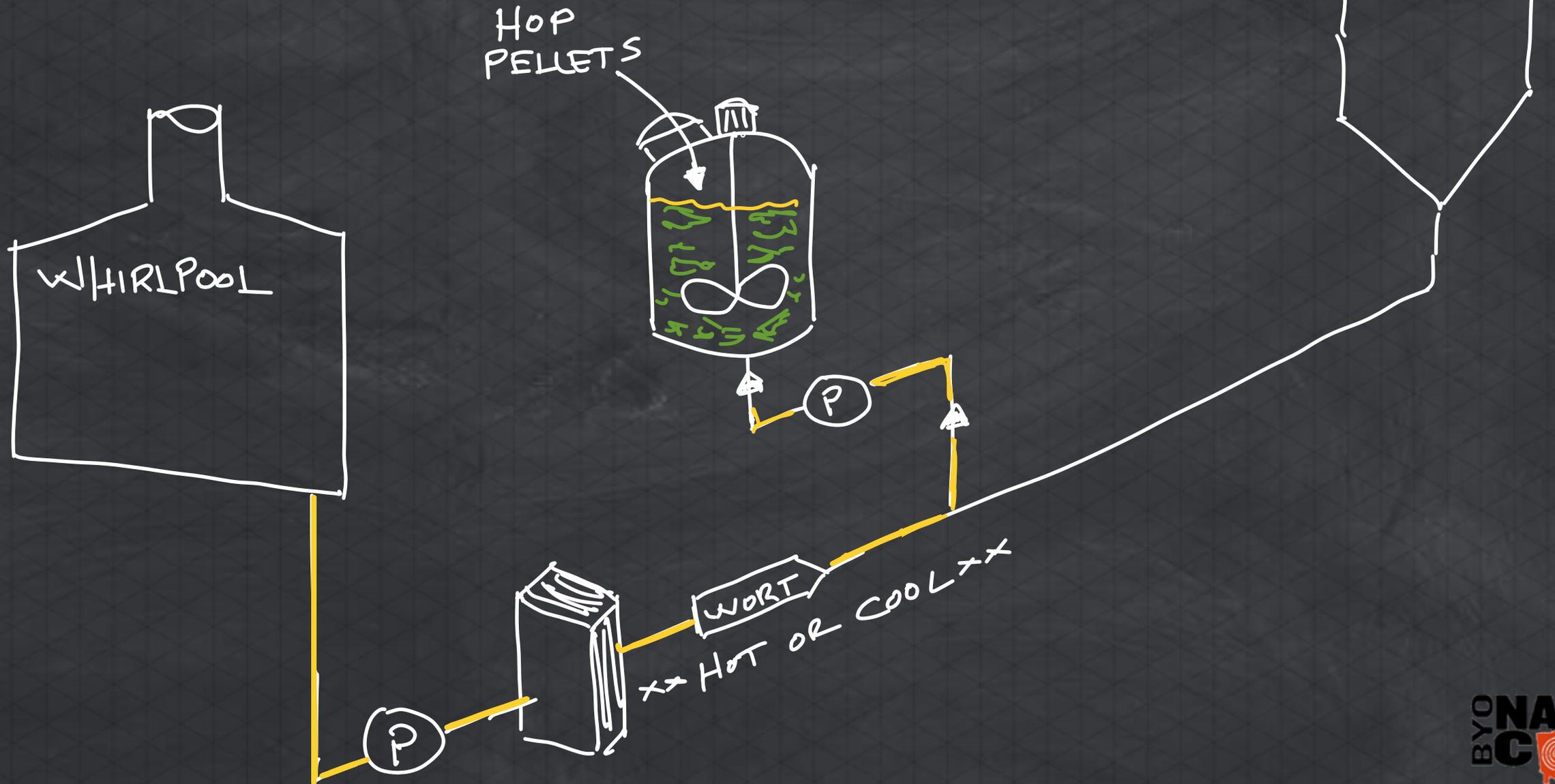
Variations on Dip Hopping



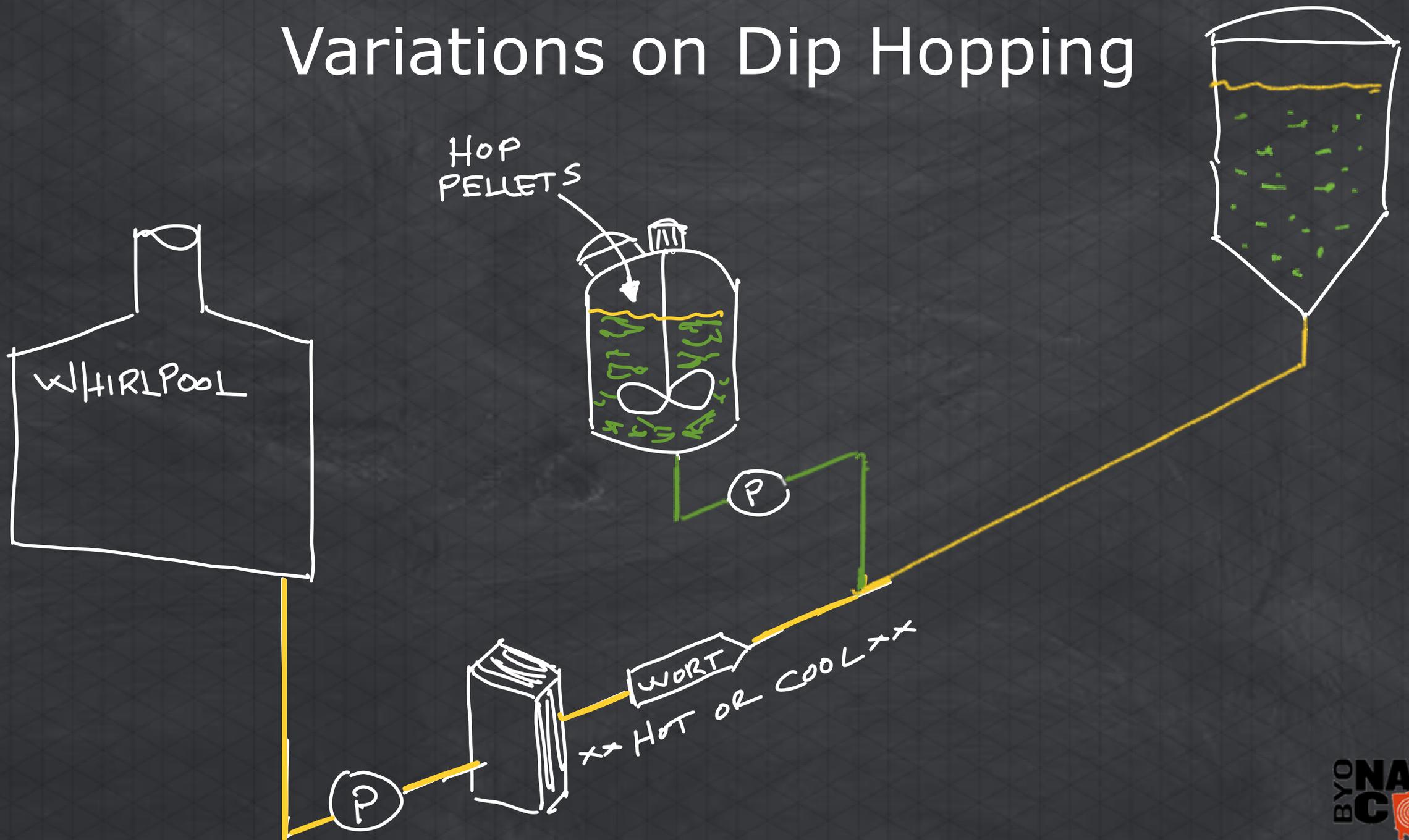
Variations on Dip Hopping



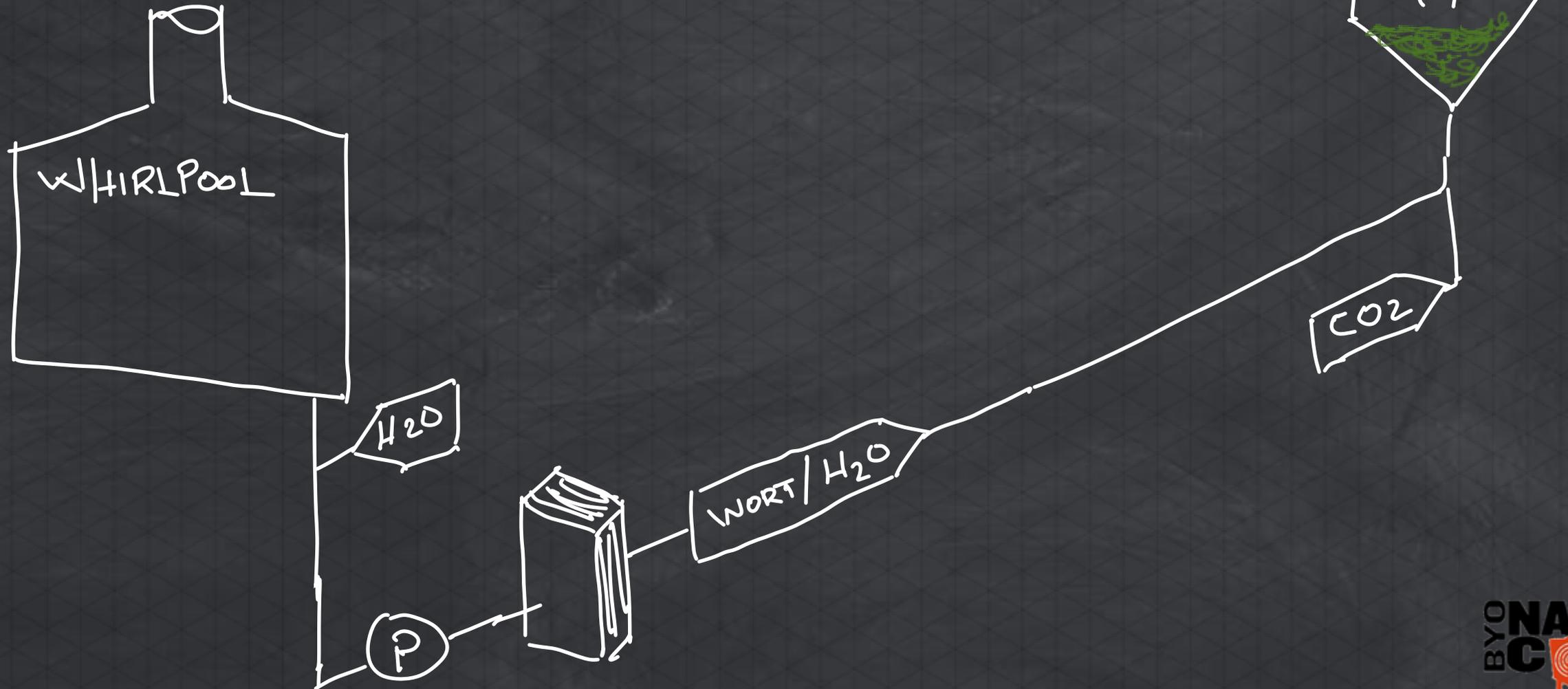
Variations on Dip Hopping



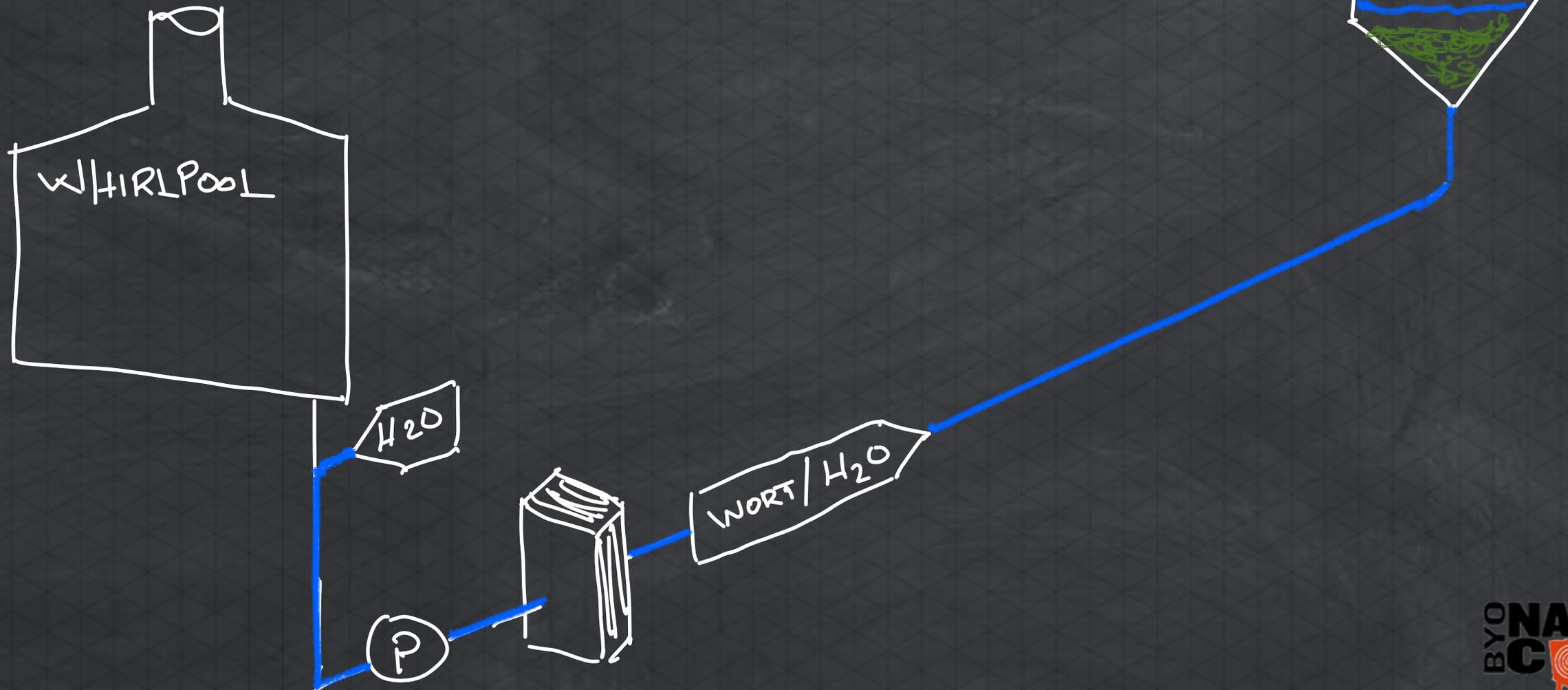
Variations on Dip Hopping



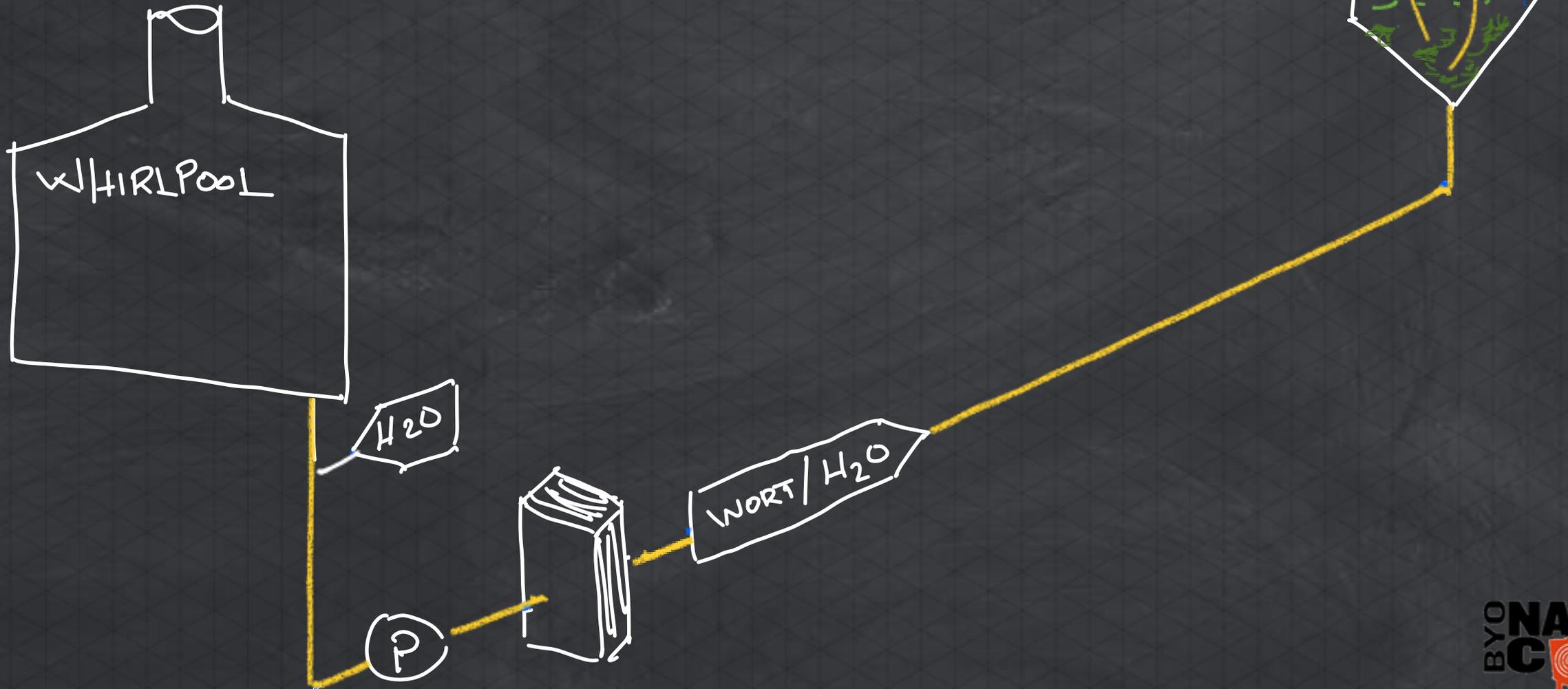
Variations on Dip Hopping



Variations on Dip Hopping



Variations on Dip Hopping



Variations on the Theme

Advanced hop products
and yeast strain selection

- CO₂ extracts, flowable lupulin, hop oils
- Low-H₂S yeast strains, proper nutrition
- Combined approach for sulfur control and aroma enhancement

Typical Method

Note that this is not a sledgehammer hopping method!

- Batch size: 1 BBL
- Dip Hops: 0.5 – 1.0 pound per BBL (0.2 - 0.4 kg/hL)
- ~10% of wort cooled to 167°F (75°C) into tank with hop pellets and allowed to stand for 30-60 minutes
- Cool, oxygenate (or not), pitch yeast
- Optional: light dry hop post-fermentation

Typical Method

Note that this is not a sledgehammer hopping method!

- Batch size: 1 BBL
- Dip Hops: 0.5 – 1.0 pound per BBL (0.2 - 0.4 kg/hL)
- ~10% of wort cooled to 167°F (75°C) into tank with hop pellets and allowed to stand for 30-60 minutes
- Cool, oxygenate (or not), pitch yeast
- Optional: light dry hop post-fermentation

When is wort for dip hopping collected?

- Towards end of boil
- Timing is important because collecting too late can result in a delay in getting hot wort out of whirlpool and into fermenter

Summary & Takeaway Ideas



- Dip hopping yields clean, bright, low-sulfur hop aroma
- Hop solids aid CO₂ scrubbing and sulfur reduction
- Can riff on process with process variations, advanced hop products, and yeast strains
- New tool in a brewer's toolbox without any investment in new equipment!



RahrBSG

THANK YOU