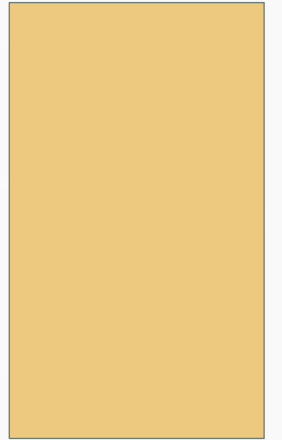




# NA PRODUCTION FOR THE CRAFT BREWER

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# THINGS TO CONSIDER

- Fastest growing segment in craft beer
- If USA follows trends in Europe, it will get bigger
- Requires significant capital investment to do it right
- Very rarely will a standard lineup beer work for an NA product. Different recipe considerations are required
- Food Safety with NA products is critical. NA beer does not have the inherent protections against microbial activity that beer does
  - No draft

# NA PROCESSES AND CAPITAL INVESTMENT REQUIREMENTS

- Cold Contact
  - Pasteurizer
- Maltose negative yeast
  - Pasteurizer
- Membrane filtration
  - Requires a membrane filtration system designed for NA beers
  - High water usage-effluent concerns
  - Pasteurizer-mixed practices
- Vacuum Distillation
  - Vacuum distillation equipment is several hundred thousand dollars
  - Also requires large utility load-glycol, steam and electrical
  - De-aerated water system
  - Pasteurizer-mixed practices by brewers
- Beer add back:
  - A solution of maltodextrin, malt extract and carbonated water mixed together and beer added until abv hits target <0.5%
- Or a combination of methods!

# RECIPE CONSIDERATIONS FOR ALCOHOL REMOVED NA PRODUCTS

- Utilize low RDF brewing:
  - Alcohol adds body
  - Higher conversion temperatures
  - Dextrin malts
  - Terminal gravity at 5-6°P
- For IPAs
  - Target 20-30 IBU. No more or beer is unbalanced
  - Some recommend no dry hop prior to alcohol removal since most of the hop aromatics are lost. Some systems capture these aromatics and they can be added back
- Use highly flavored malts to improve “beeriness”
- Consider CO2 hop extracts in the brewhouse for improved flavor and aroma retention
- Dark beers survive the process better than other styles

# RECIPE CONSIDERATIONS FOR COLD CONTACT, LOW ALCOHOL YEASTS

- Do a lot of testing with the available strains. The flavors produced are different. German brewers have considerable expertise
- Utilize low RDF brewing:
  - Target 6-8°P wort
  - Terminal gravity at 5-6°P to target 0.5% abv or less
  - Higher conversion temperatures
  - Dextrin malts
- For IPAs
  - Target 20-30 IBU. No more or beer is unbalanced
- pH adjustment will likely be required, since the “normal” pH drop during fermentation won’t be realized
- Maltose negative yeast fermentation times need to be built into the production plan

# ADD BACKS

- Lots of products out there-do lots of research and think out of the box
- Beer flavor-flavorhouses, industry suppliers, capture systems on NA processes
- Mouthfeel
  - Spent Hops for polyphenols
  - Dietary fiber
- Hops:
  - Hop oils and extracts
  - T90 pellets and Concentrated Lupulin: Be mindful of enzymatic action/hop creep and subsequent fermentation
  - Terpenes
  - Natural fruit extracts
- Haze:
  - Hop derived haze products
  - Tannin based haze products