

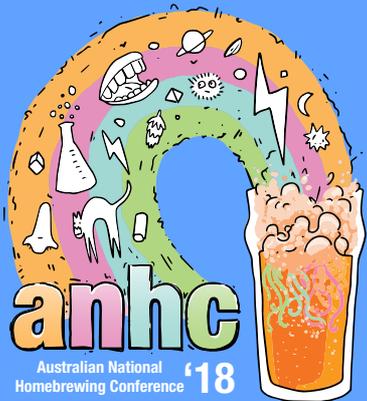
SATURDAY AFTERNOON: Sponsored by



Gladfield
WORLD'S BEST PURE MALT NEW ZEALAND

Haze craze: History and tips for brewing a good juicy NEIPA

Duncan Gibson



Session Chair: Helen Hewson
Tasting Brewer: Ben Soulsby and Hop Nation

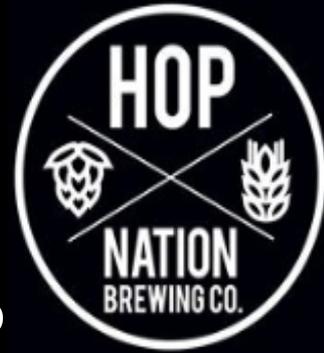
© anhc 2018



**HAZE CRAZE:
HISTORY AND TIPS FOR
BREWING A GOOD JUICY NEIPA**

Duncan Gibson
Hop Nation Brewing Co.

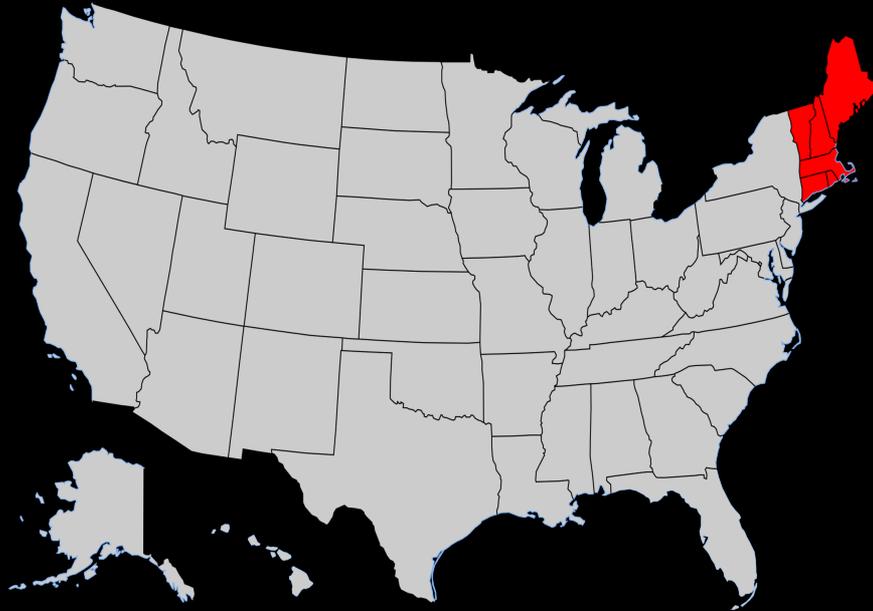
MY BACKGROUND



- Studied winemaking and worked as a Winemaker for 10 years
- Started Hop Nation in 2014 with Sam Hambour
- Whilst making wine in Portland 2014, I had a friend who bought back Heady Topper from a trip to the east coast and my fascination for haze started
- Initially, Sam and I were Gypsy Brewers
- Opened our Brewery and Bar in Footscray in July 2016
- Our very first beer produced at our own site was a NEIPA (supposed to be a double IPA)
- Jedi Juice was released for GABS 2017

NEW ENGLAND

- Geographical region in the United States of America
- It is comprised of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island and Connecticut



HISTORY - RISE OF THE HAZE

- The Alchemist Brewery – NEIPA trailblazers
- American West Coast IPA – 100 + IBU
- New Hop Varieties
- Yeast and Hop interaction
- Taproom Craze
- Fresh is best

THE ALCHEMIST



- Brewery located in Stowe, VT
- John Kimmich and Greg Noonan were brewing hazy IPA in the mid 1990s
- Noonan passed away in 2009 but was one of the few Brewers of his time that believed clarity was not an issue in beer
- Kimmich expanded Noonan's work and opened The Alchemist brew pub in 2003, making hazy IPA
- His goal was to make IPA that smelled and tasted like great weed
- Tap room model with growler fills for the first 9 years
- In 2011, they started canning and selling, still only sold within 25 miles of the Brewery
- Shane Hill opened Hill Farmstead in 2010 after frequenting The Alchemist brew pub
- From this, loads of Breweries in the area and around the world started making NEIPA

WEST COAST IPA

- During the early 2000s, there was an IBU race
- People were happy to advertise IBUs of 100
- But the style was becoming out of balance
- Hard for new beer drinkers to understand
- This left a gap that NEIPA filled

HOPS AND YEAST

- As NEIPAs were coming online, a lot of new hop varieties also became widely available
- Citra, Mosaic, Galaxy, and Nelson Sauvin
- These hop varieties have the flavour profile to compliment the juicy style
- Yeast that produced more fruity esters were used
- Yeast hop interaction was further understood, bio transformation



TAPROOM CRAZE

- The popularity of the taproom
- NEIPA drink fresh style



Style – Key CHARACTERISTICS

- Hazy
- De-emphasizes hop bitterness
- Low IBU or perceived bitterness
- Hop juiciness, loads of hop character
- Silky mouthfeel



Style – In Depth

- **Colour:** Straw to deep gold
- **Clarity:** Low to very high degree of cloudiness is typical of these beers. Starch, yeast, hop, protein and/or other compounds contribute to a wide range of hazy appearance within this category
- **Perceived Malt Aroma & Flavour:** Low to low-medium malt aroma and flavour may be present
- **Perceived Hop Aroma & Flavour:** High to very high hop aroma and flavour are present, with attributes typical of hops from any origin
- **Perceived Bitterness:** Low to medium. Perceived impression of bitterness is soft and well-integrated into overall balance, and may differ significantly from measured or calculated IBU levels
- **Fermentation Characteristics:** Low to medium fruity-estery aroma and flavour may be present but are usually overwhelmed by hop fruitiness. Diacetyl should not be perceived
- **Body:** Medium-low to medium-high. Perceived silky or full mouthfeel may contribute to overall flavor profile
- **Additional notes:** Grist may include a small amount of oat, wheat or other adjuncts to promote haziness. Descriptors such as juicy are often used to describe the taste and aroma hop-derived attributes present in the NEIPA style
- Original Gravity 1.070-1.100(17.1-23.7 Apparent Extract/Final Gravity 1.012-1.020(3.1-5.1 Alcohol by Weight (Volume) 6.0%-8.4%(7.6%-10.6%) ? Bitterness (IBU) 65-100; may differ from perceived bitterness Color SRM (EBC) 4-7(8-14 EBC)

HOW TO ACHIEVE THIS

- Brew water profile
- Mash
- Boil
- Ferment
- Dry hopping
- Packaging
- Consumption



BREW WATER PROFILE

- Two main schools of thought
- High use of CaCl_2 helps increase haze and juiciness of mouthfeel but does not help hop aroma (2:1 ratio of chloride to sulphate is commonly used)
- Others use a more traditional IPA sulphate heavy water profile, helping hops to punch out
- Personally, I am of the second school of thought – it's more important that the hop shines

MASH

- We are looking to maximize protein in the final beer, giving mouthfeel and the silky texture associated with the NEIPA style
- Increasing mash temp gives sweetness and mouthfeel to final beer. For our NEIPAs, we mash at 69 - 72 degrees depending on the beer
- Using oats, wheat and unmalted wheat increases protein and mouthfeel
- We use a simple Pilsner or Ale Malt and build mouthfeel with oats etc.

BOIL

- NEIPA style dictates low perceived bitterness
- Little or no boil hop added
- Whirlpool hop added (we do a large addition)
- Boil can also be cooled to below hop isomerization point before the Whirlpool hop is added so a larger amount of hops can be added without IBUs getting of hand
- Kettle finings can be added. This will decrease the protein in the final beer. We do fine the kettle as we believe our protein haze is more stable in the long run – i.e. get rid of the weak unstable proteins as you don't want to end up with a snow globe NEIPA

FERMENT

- Probably the most important part of making a great NEIPA
- Normal fermentation temperature is 18 degrees, higher if more esters are desired
- Hop addition timing, types and amounts
- Yeast selection



YEAST

- Loads of strains can be used
- Normally low attenuation
- Some ester production
- Aids haze formation
- Bio transformation ability



DRY HOPPING

- Loads of different opinions and ways
- We do two dry hoppings
- One on day three of fermentation and one on cold crash
- Fermentation hop should help get a juicer beer as bio transformation occurs
- Bio transformation is the interaction between active yeast, hop oil transforming non aromatic glycosides into aromatic terpenes, and terpenes into other terpenes
- This transformation gives NEIPA its original juicy flavor which is not found in other IPA styles
- Dry hopping rates are high. We use 10-15g/L dry hop over the two dry hops
- Hop varieties – top tier American hops are a great base (Mosaic, Citra, Simcoe etc.). NZ and AUS hops are also great in the mix. Stay away from more traditional European varieties
- Use of fresh hops – Hop Oxidation

HAZE

- NEIPA needs haze
- It should be the bi-product of making the beer not the focus
- Protein from mash
- Salts
- Hop haze
- Adjuncts like flour and pectin can be used
- Haze can fall if beer gets old

PACKAGING AND CONSUMPTION

- FRESH IS BEST
- NEIPA is a delicate beer style that does not travel or store well
- Drink at your local taproom
- Canning is great for the style as its very susceptible to oxidation and will get light struck easily
- I think NEIPA should be drunk no more than a month old
- Drink your juice by the gallon

		Brewhouse Log			TARGETS			
Date		Hop Nation, 1600L			OE%	14.00%	IBU	40
Shift					AE%	2.50%	ABV	6.0%
Brewer					OG	1.057	Kettle vol	1600
					FG	1.010	Cartval	1500
					offskettle	76%	Atten.	76.0%

GRIST										
Item	Batch	FGDB%	Maintenance%		Calc kg	Actual kg	Actual % grist	Extract kg	% of extract	Wort Calcu
Gladfield Light Lager		81.00%	3.50%	70.50%	281.0	275.0	70.51%	214.954	71.52%	
Gladfield Wheat		85.00%	4.80%	12.80%	49.3	50.0	12.82%	40.46	13.46%	
Gladfield Oat		70.00%	7.50%	10.30%	49.6	40	10.26%	25.9	8.62%	
Gladfield Gladiator		82.00%	5.00%	3.20%	12.8	12.5	3.21%	9.7375	3.24%	
Unmalted wheat		80.00%	5.00%	3.20%	13.1	12.5	3.21%	9.5	3.16%	
					0.0		0.00%	0	0.00%	
					0.0		0.00%	0	0.00%	
Extract required	311.54		Total	100.00%	405.74	390.00	Actual kg	300.55	100.00%	

MASH									
	Target	Actual		From	To	Additions	Grams	Actual	
Initial Mash temp	69					CaSO4	400		
LR ratio	2.5	2.6				CaCL2	300		
Mash Liquor L	975	1000				Lactic	150		
Mash pH	5.3								

KETTLE ADDITIONS									
Hop	Target time	Batch	kg	Utilisation%	AA%	Actual q/L	calc BU	Target	
Mataoka	FW		0.2	35.00%	7.00%	0.13	2.45	2.5	
Citra	WP		5	13.00%	12.00%	3.13	39.00	39	
Simcoe	WP		5	13.00%	13.00%	3.13	42.25	42	
AA% Wort to Beer	80.00%		10.2		Total	6.39	83.70	83.5	
					Targets				

WHIRPOOL/KO									
	From	To		Target	Actual		Target	Actual	FV NUMBER
			Coaling temp	18		Extract to FV	221.94	221.94	
WP rest			Ox flow	4L/min		Eff to FV	73.84%	73.84%	
Knockout			Val to FV	1500	1500	Extract to drain	78.61	78.61	

YEAST AND QC									
Strain	GY054								
Generation									
Source									

DRY HOP									
Hop/add	Target q/L	Lin Tank	Amount calc kg	Actual kg	Calc q/L	Timing	Added		
Maraic	7	1500	10.5	10	6.67	FREM			
Ella	3	1500	4.5	5	3.33	CRASH			
		1500	0		0.00				
Total			15.00		10				

QUESTION TIME

