



The business of brewing hops A brewers checklist

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This identifies the key attributes the brewery should be aware of when dealing with their hop management.

Hops are perhaps the key raw material in developing flavour and character in a beer.

Get it right and you have beer that refreshes, gives depth, complexity of flavour and is perfectly balanced.

Get it wrong and you have an unbalanced hotchpot of flavours.

Four point checklist

1. Selection
2. Purchase
3. Use
4. Storage

1. Selection

- Hop choice - Think about the style of beer that you want to create
 - Blond - beers hops are critical
 - Darker beers less so with roasted malts and adjunct
- Consider what type of hops you want to use
 - Whole/leaf, T90, T100, pre-isomerised, hop products
- Where to source
 - Buy off the shelf 'as is' or select on quality from whole hop samples
- If you can, view before you buy either as block sample or loose roll

What to look for

- Rub and sniff
 - Feel , indicates moisture and how they have been stored and oil content as hands grease up
 - Smell the oils to make sure that they are true to type for that variety and look for negative notes such as cheesy which is an indication of age or how it has been stored
- Check it is the desired variety and true to type
- Clean pick- low strig, no '5-bar gate', low leaf (indicative of how the grower has set up their picking machine – quality versus yield)
- No foreign objects – string, other plant material
- Signs of disease or insect damage – look for signs of mildew or lesions
- Wind damage – how much can indicate where the bine was in the hop garden – generally worst on the perimeter bines

Cut samples are most representative – Roll sample often has better aroma as less compressed and lupulin glands remain intact

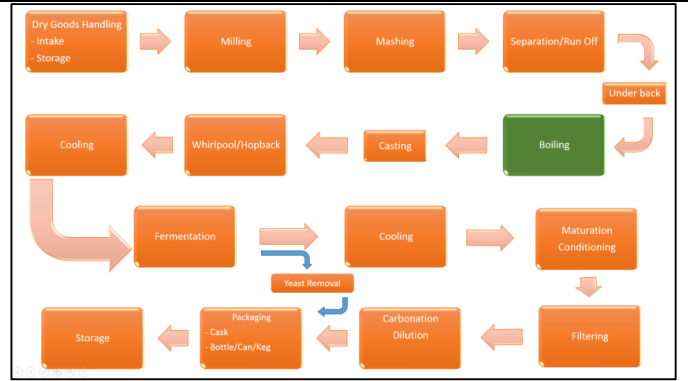
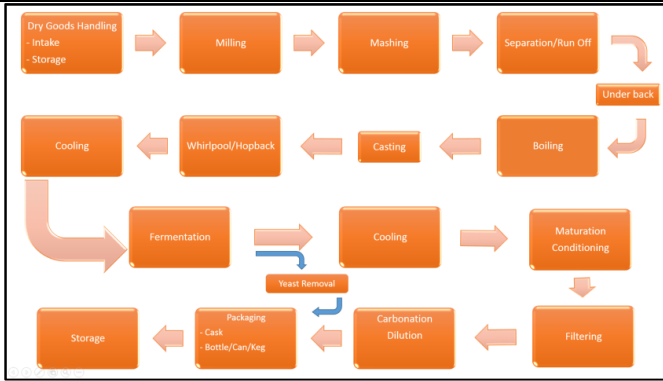
Think about availability

- supply and demand (competition)
- Sustainability of varieties
- Cost / value for money
- Does it have a USP (*unique selling point*)
- Always look at the back catalogue not just trendy varieties

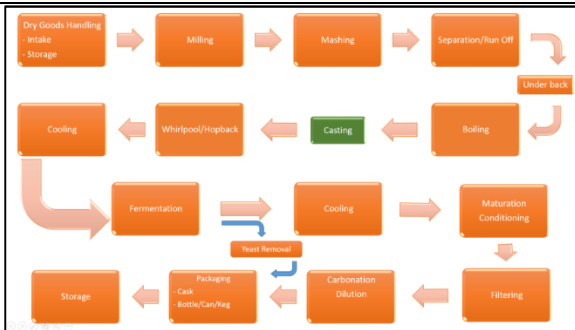
2. Purchase

- Contract or spot?
- In this current climate it is recommended that you contract 1 – 5 years ahead
- Buy on weight of hop or alpha?
 - Weight of hop – risk is on the buyer
 - KG of alpha – risk is on the merchant who benefit or who carries the risk
- Tendering to all merchants can cause a 'run on the bank'
- Consider specific varieties by merchant
- Consider what alternative could be used
- Consider buying cheaper or high alpha varieties for bittering

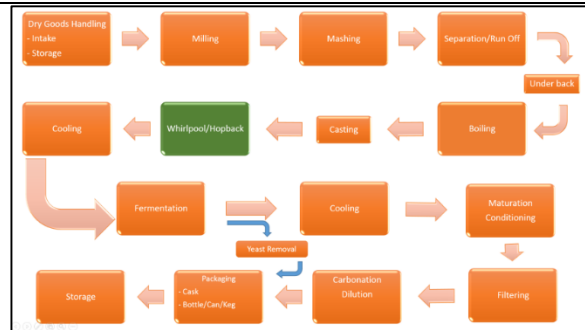
3. Use of hops



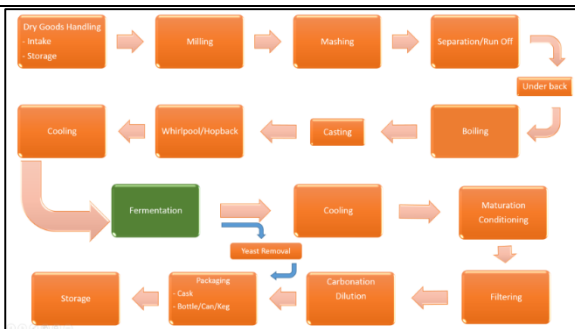
- Boiling
- 40 minute min to get isomerisation
- At best circa 40% hop utilisation
- Consider using pre-isomerised hops to improve the utilisation
- Maybe use a cheaper hop for bittering



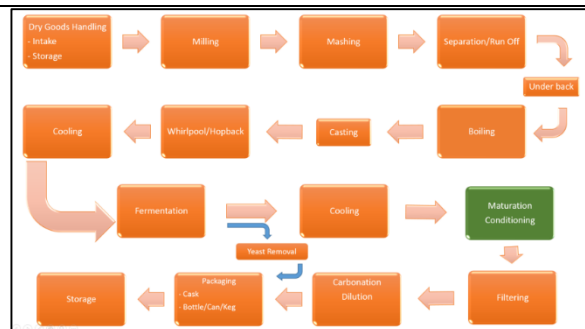
- Add just prior to casting –
- Good mixing as the casting process tends to be rapid to whirlpool to get the
- Lower hop utilisation say 10% but good oil extraction



- Residence time will affect the utilisation
- Longer residence is greater
- Release of the hop oils

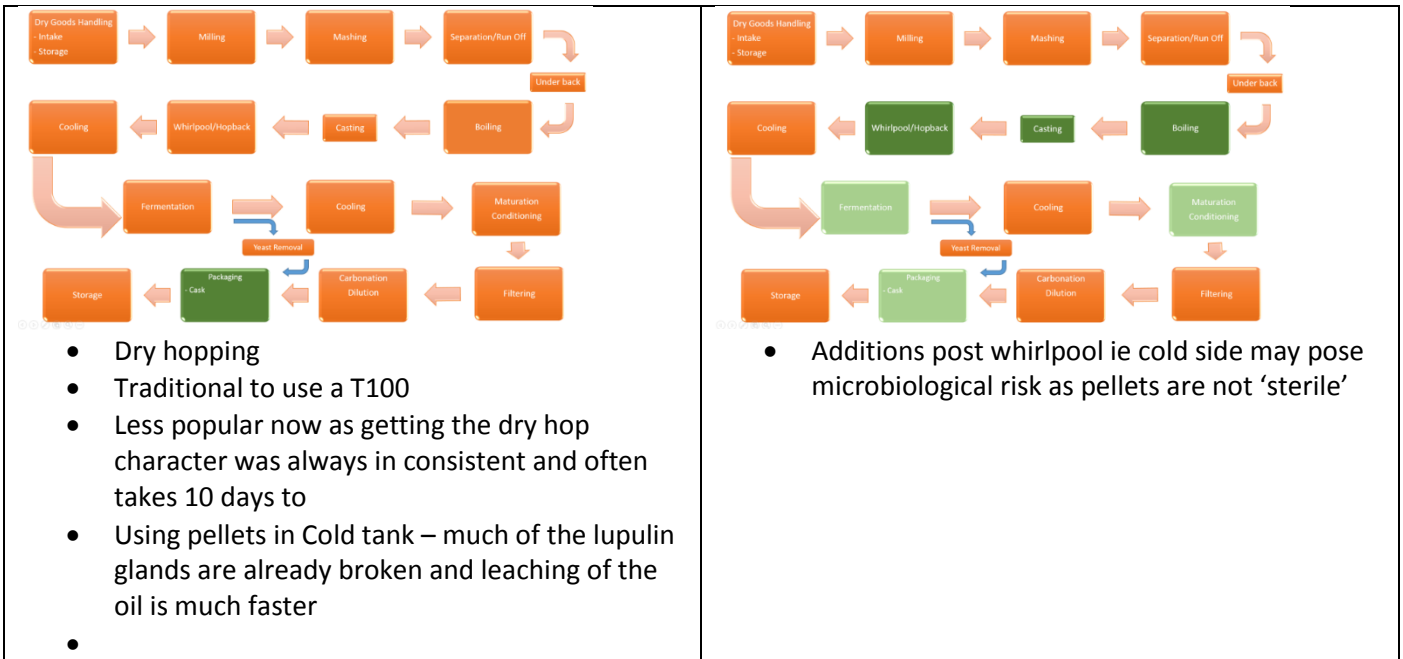


- Cold side of heat exchanger
- No bittering but good aroma
- Often yeast not great for serial repitching due to cold break and hop debris



- Addition to cold tank is getting popular
- Pellets break up quickly – good dispersion
- Yeast is not contaminated
- Care with clarifying – can leave a haze
- Can increase the loading onto the filters

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4. Storage

Storage should be cool/cold and dry

Consider

- How much requires storing
- What stock do you need?
- How many varieties do you need to stock
- Stock rotation,
- Where to store – cold store, brewery, or merchant (call off as needed)
- Cost of storage
- Consider dual storage ie more than 1 place for business continuity.
- In an emergency where can you source quickly?
- Hop mountain – occurs when brewers merge, have old contracts, wrong varieties, change of recipe or use
- Quality of storage, cold store , brewery, think about the volume versus through put
- Alpha acid value is only valid at time of harvest, it can be lower on storage. Expect 2% loss even in cold store each year
- Blend or not to blend – blended pellets give consistency
- Single hop – this is one dimensional and can fluctuate year on year, boom or bust crop failure
- Storage – can you store more than 1 year in case of crop failure or non-availability?
- Try to use whole bags/packets of hops – part bags and packets will quickly oxidise leading poor utilisation and negative flavours

Cold storage

- After packing into pockets or bales on the farm the hops are placed in cold storage until they can be processed to the requirements of the brewer. The temperature (between 3 and 7 degrees centigrade) and the humidity are closely monitored.
- Good airflow is essential to prevent heat build up in the event hops are too moist!

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- If too close and too moist you can get spontaneous combustion via microbes.

Future

- What are the new varieties? Keep a watching eye on developments
- What are the new trends?
- What new marketing requests? Bigger breweries need a crystal ball to keep up with what the marketer's need next
- What are the new products?
- Think how the beer market has changed in last 20 years
- There is now more competition, so think about your need for a unique selling point

Summary

- New varieties on the block but don't forget the old ones
- Risks to supply – early warning
- Single merchant for specific varieties
- Build a good relationship with you're your supplier /merchant. They can advise replacement varieties at times of stock out

This information is provided courtesy of John Bexon and Charles Faram & Co Ltd. It is intended as guidance for purchasers of hops. This is not a legal document, nor should the advice given be deemed to be mandatory.