



Dry Hopping

What is it?

- Dry hopping basically means any addition of hops after chilling the wort, but most commonly refers to adding hops to the beer post fermentation but prior to packaging.
- Started many years ago by British brewers adding hops to the cask before it was sent off to the pub. Hop plugs were developed specifically for this purpose to fit through the shive hole.

Why dry hop?

- Dry hopping adds 'hop' character without additional bitterness due to no further isomerisation of alpha acids.
- Hop character from dry hopping is different to hops added during the boil or at the end of the boil. Commonly described as 'grassy' – not everyone is a fan.
- Some hop oils like myrcene (think Cascade, Amarillo, Citra, Simcoe etc.) are highly volatile and will boil off readily during the boil. Dry hopping allows more better extraction/less loss.

How to do it?

- Typical home application is to add pellets/flowers post fermentation, either in primary fermenter or secondary, wait a few days to a week then bottle/keg.
- Convention usually dictates that you should dry hop for about a week, however there is some evidence to suggest that shorter time frames may result in better extraction.
- Hops are generally safe to add post fermentation without risk of contamination – hops are a natural preservative – but remember to follow normal sanitary procedures.
- Pellets or whole hops can be used – due to processing pellets generally have less hop oils than whole hops however extraction is better when using pellets.
- Pellets will typically sink, while whole hops will usually float. It may be useful to use a bag to avoid blocked taps etc. noting that this will reduce the exposure of hops to the beer.

Other considerations....

- Adding dry hops post fermentation means that aroma won't be lost due to CO₂ scrubbing.
- Yeast dropping out of suspension may remove hop aroma as well.
- Higher temperatures increase extraction, but dropping yeast out of suspension usually requires chilling...
- Mixing dry hops has been shown to increase extraction – commercial brewers such as Sierra Nevada use things like the hop torpedo for this.
- Hops can also be added directly to the keg – but remember that if adding pellets to carbonated beer this will create many nucleation sites and may result in heaps of foam!
- Dry hopping can also be done using a Randall or hop tower like the one at the bar in line from the keg to the glass.
- All hop aroma will dissipate with time, so drink it while it's fresh!

Head to <http://sabrew.com/2015/02/dry-hopping-notes/> or scan the code below to access an online version of this file so you can click on the links.



Further reading...

<https://byo.com/hops/item/568-dry-hopping-for-great-aroma>

<https://byo.com/hops/item/569-dry-hopping-techniques>

<http://www.hops.com.au/blog/2013-08/hop-topic--dry-hopping>

<http://morebeer.com/brewingtechniques/library/backissues/issue2.1/tinseth.html>

<http://braukaiser.com/blog/blog/2012/12/12/interesting-paper-on-dry-hopping/>

<http://morebeer.com/brewingtechniques/library/backissues/issue2.1/tinseth.html>

<http://www.metabrewing.com/2013/02/recirculating-dry-hops-extract-more.html>

<http://inhoppursuit.blogspot.com.au/2012/02/more-aroma-oil-faster-dry-hopsters-holy.html>

<http://byo.com/hops/item/1899-torpedoes-away>

<http://www.brewdog.com/blog-article/the-economics-of-a-dry-hopped-beer>